# **CUS250M Series**

# 2 x 4" 250W AC-DC Power Supplies

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The compact CUS250M is packaged in the industry standard 2x4" footprint. The series can deliver 250W with forced air or conduction cooling in ambient temperatures of up to 45°C. With Medical & ITE certifications, the unit can be used in both Class I & Class II (no ground wire) applications, and meets Class B Conducted and Radiated EMI with generous margins. Input voltage range includes operation down to 80Vac (see instruction manual for ratings). Other options include a 5V standby voltage, remote on/off, DC\_OK and AC\_Fail signals, with a U channel, cover or top fan mechanical construction.

Features	Benefits
Up to 250W Utilizing Convection and Conduction Cooling	Quiet Operation
Operation in Ambient Temperatures of up to 85°C	Suitable for High Ambient Temperature Environments
Medical Certifications (2 x MOPP)	Suitable for B and BF Type Medical Equipment
Class B Conducted and Radiated EMI with Significant Margins	Easier System EMC Compliance
Certified for Class I and Class II installations	Flexible Utilisation
• Compact 2 x 4 x 1.56" / 50.8 x 101.6 x 39.5mm Size	Space Saving in End Equipment
Enclosure & Cooling Options	Versatile Application
• EN60335-1 Compliant	Suitable for Household and Similar Electrical Appliances

### Model Selector

Model	Nominal Output Voltage (V)	Output Adjustment <sup>(1)</sup> (V)	Fan Supply (V)	Maximum Current Forced Air (A)	Maximum Power Forced Air (W)
CUS250M-12	12	12 - 13.2	11.4	20.83	250
CUS250M-15	15	15 - 16.5	11.4	16.66	250
CUS250M-18	18	18 - 19.8	11.4	13.88	250
CUS250M-24	24	24 - 26.4	11.4	10.41	250
CUS250M-28	28	28 - 30.8	11.4	8.92	250
CUS250M-36	36	36 - 39.6	11.4	6.94	250
CUS250M-48	48	48 - 52.8	11.4	5.2	250



(2) Subject to Minimum Order Quantities. Please contact Sales



### **Specifications**

Model		CUS250M		
Input				
Input Voltage Range (Operating)	Vac	80 - 264 <sup>(3)</sup>		
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 80-264Vac)		
Input Frequency	Hz	47 - 63 <sup>(4)</sup>		
Input Current (100Vac)	A	3.1		
Inrush Current at 230Vac (Cold Start)	A	<75. Note: the inrush I <sup>2</sup> t is significantly below the rating of the internal 5A fast acting fuse, or an external circuit breaker		
Leakage Current	uA	<150 at 264Vac 63Hz		
Touch Current (Enclosure Leakage)	uA	Class I: <10, Class II: <70, at 264Vac 63Hz		
Power Factor (115/230Vac)	-	>0.9 / >0.7 (>20% load)		
Harmonic Compliance	-	Meets IEC61000-3-2 Class A		
No Load Power Consumption	W	<0.5 (230Vac) when output is inhibited		
Hold Up Time	ms	>14		
Efficiency	%	Up to 94		
Average Efficiency	%	>91 Measured at 25%, 50%, 75% and 100% load conditions		
Conducted & Radiated EMI	-	EN55032 / EN55011-B (See application notes for conditions)		
Immunity	-	Designed to meet IEC60601-1-2 Ed.4.1, see immunity table		
Insulation Class	-	Construction suitable for Class I or Class II installation		
Safety Certifications and Markings	-	IEC/ES/EN60601-1, IEC/UL/EN62368-1, 60950-1.		
		Compliant to IEC/EN60335-1 <sup>(5)</sup> and IEC/EN61010-1, CE Mark and UKCA Mark		

Notes: (3) Derate output power linearly by 1%/Vac to 225W load from 100 to 90Vac input. Output power is reduced by 2%/Vac between 90Vac and 80Vac (180W at 80Vac) (4) For operation at 440Hz please consult Technical Sales. (5) 12 and 24V models only

# Trusted • Innovative • Reliable

Fest     Test     UOM     Level & Orteria       EC61000-42 (ESD)     AC Port     LM     Level & Orteria A       EC61000-42 (ESD)     AC Port     LM     Level & Orteria A       EC61000-43     80 Metz D 2 7 GHz     Vm     10 (Level & Orteria A)       EC61000-43     80 Metz D 2 7 GHz     Vm     10 (Level & Orteria A)       EC61000-43     80 Metz D 2 7 GHz     Vm     10 (Level & Orteria A)       FR addated Immunity     27 GHz 16 6 GHz     Vm     10 (Level & Orteria A)       EC61000-43     80 Metz D 2 7 GHz     Vm     3 (Table 1, condition 13 requirements, Criteria A)       EC61000-44     AC Port     Vm     3 (Table 1, condition 13 requirements, Criteria A)       EC61000-44     AC Port     KV     4 (Level 4, Criteria A)       (Edectical Fast Transient Burst)     Fan Out, Standby     KV     10 (Level 3, Criteria A)       (EC61000-44     (AC input common mode)     V     10 (Level 4, Criteria A)       (Conducted Susceptibility)     (Fin Out. Standby common mode)     V     10 (Level 4, Criteria A)       (Conducted Susceptibility)     (Fin Out. Standby common mode)     V     10 (L	Immunity				
Endour Port     LM     Level 4, Criteria A       Lic 00100-42 (ESD)     CH1 and Standby     LM     Level 3, Criteria A       EC01000-43     Signal I/O Port (Remote On/Of, AC, FALL, D.C. OK)     LM     Level 3, Criteria A       IEC01000-43     Signal I/O Port (Remote On/Of, AC, FALL, D.C. OK)     LM     Level 3, Criteria A       (Radiated Immunity)     27 GHz to G GHz     Vm     10 (Level 3, Criteria A)       (Radiated Immunity)     GFM Vieless Communications Equipment     A     A Criteria Criteria A       (EC 61204-3)     0.90 MHz (koged Carine)     Vm     3 (Table 1, condition 13 requirements, Criteria A)       (EC 61204-3)     0.90 MHz (koged Carine)     Vm     3 (Criteria A)       (EC 61204-3)     0.90 MHz (koged Carine)     Vm     3 (Criteria A)       (EC 61204-3)     Ch1     KV     2 (Level 4, Criteria A)       (EC 61204-4)     Ch1     KV     2 (Level 3, Criteria A)       (EC 61204-5)     Ch1     Ch1     KV     2 (Level 3, Criteria A)       (EC 61004-45 (Surge)     Ch1     KC ruput common mode)     V     10 (Level 3, Criteria A)       (EC 61000-45 (Surge)     Ch1 <t< th=""><th>Test</th><th>Test</th><th>UOM</th><th>Level &amp; Criteria</th></t<>	Test	Test	UOM	Level & Criteria	
IEC61004-2 (ESD)AC Port CH1 and Sandby Signal IVO Port (Renote On/Off, AC, FAIL, DC, OK)Lot Level 3, Criteria AIEC61004-3580 MHz 02, 7 GHzVm10 (Level 3, Criteria A)Radiated Immunky80 MHz 02, 7 GHzVm10 (Level 3, Criteria A)EN 60001-12:2015Immunky to FK Wireless Communications Equipment (Table 9)		Enclosure Port	Lvl	Level 4, Criteria A	
ILC31000-42 (ESD)     CH1 and Slandby     LM     Level 3. Criteria A       IEC61000-43     Signal I/O Port (Remote On/OR, AC, FAIL, DC, OK)     Vm     10 (Level 3, Criteria A)       (Radiated Immunhy)     27 GHz 66 GHz     Vm     10 (Level 3, Criteria A)       (Radiated Immunhy)     27 GHz 66 GHz     Vm     3 (Criteria A)       (Radiated Immunhy)     (Table 9)     Vm     3 (Table 1, cordition 13 requirements, Criteria A)       (EC 61204-32, 2000     13 GHz 15 GHz     Vm     3 (Table 1, cordition 13 requirements, Criteria A)       (EC 61204-32, 2000     30 MHz (kozy 4 Carrier)     Vm     3 (Table 1, cordition 13 requirements, Criteria A)       (EC 61204-32, 2000     30 MHz (kozy 4 Carrier)     Vm     3 (Table 1, cordition 13 requirements, Criteria A)       (EC 61204-32, 2000     30 MHz (kozy 6 Carrier)     Vm     3 (Table 1, cordition A)       (EC 61204-42     Criteria A)     Vm     4 (Level 3, Criteria A)       (EC 61204-43     Grineria A)     Criteria A)     Vm       (Corduted Susceptibility)     (Carript cormon mode)     Vm     10 (Level 3, Criteria A)       (Corduted Susceptibility)     (Far 0d, Scarbit)     Vm     10 (Level 3, Criteri		AC Port	Lvl	Level 4, Criteria A	
IncomparisonSignal UP Ont (Remote On/Off, AC_FAIL, DC_OK)UsilLevel 3, Criteria AIEC61000-4.360 MHz to 2.7 GHz to 6 GHzVim10 (Level 3, Criteria A)Related Immunity2.7 GHz to 6 GHzVim3 (Criteria A)(Radiated Immunity)18 GHz to 5 GHzVim3 (Criteria A)(Radiated Immunity)18 GHz to 5 GHzVim3 (Criteria A)(EG 120-3, 2000)900 MHz (Weyed Carrier)Vim3 (Criteria A)(EG 120-4, 2000)900 MHz (Weyed Carrier)Vim3 (Criteria A)(EG 1000-4.4)CA PortCH1Vim3 (Criteria A)(Edectical Fast Transient But)Fan Out, StandbyVim3 (Criteria A)(Edectical Fast Transient DuronSignal UP on (Remote On/Off, AC_FAIL, DC_OK)Vim2 (Level 4, Criteria A)(Edectical Susceptibility)(Crinut common mode)Vim10 (Level 3, Criteria A)(Edectical Susceptibility)(Crinut common mode)Vim10 (Level 3, Criteria A)(Edectical Susceptibility)(Criteria common mode)Vimmit10 (Level 3, Criteria A) <td>IEC61000-4-2 (ESD)</td> <td>CH1 and Standby</td> <td>Lvl</td> <td>Level 3, Criteria A</td>	IEC61000-4-2 (ESD)	CH1 and Standby	Lvl	Level 3, Criteria A	
IEC61000.4.3 (Radiated Immunity)     BMHz to 2.7 GHz     Vim     10 (Level 3, Criteria A)       E06001-1.22015 (Radiated Immunity)     Immunity to FV Weless Communications Equipment (Table 9)     -     Al Criteria A       CISPR 35     1.8 GHz to 5 GHz     Vim     3 (Table 1, condition 1.3 requirements, Criteria A)       IEC6 1000-4.4     AC Port     Vim     3 (Table 1, condition 1.3 requirements, Criteria A)       IEC6 1000-4.4     AC Port     Vim     3 (Table 1, condition 1.3 requirements, Criteria A)       IEC6 1000-4.4     AC Port     Vim     3 (Table 1, condition 1.3 requirements, Criteria A)       IEC6 1000-4.4     AC Port     Viv     3 (Criteria A)       (Electrical Fast Transient Busts)     Fan Out, Standby     Viv     Viv       (EC61000-4.5 (Surge)     (AC input common mode)     Viv     Viv     Viv       (IEC61000-4.6     (Conducted Susceptibility)     (EC61000-4.6     (Conducted Susceptibility)     (Ievel 4, Criteria A)       (IEC61000-4.6     (Vic to 1, Standby common mode)     Viv     NA     (Ievel 4, Criteria A)       (Votage dips / Interruption)     (Wine state factory (Buk cap life degradation not considered)     Viv     NA		Signal I/O Port (Remote On/Off, AC FAIL, DC OK)	Lvl	Level 3, Criteria A	
(Radiated Immunity)     2.7 GHz to 6 GHz     V/m     10 (Level 3, Criteria A)       EN 0001-12:2015     Immunity 0 FF Wireless Communications Equipment (Radiated Immunity)     Al Criteria A       CISPR 35     18 GHz to 5 GHz     V/m     3 (Table 1, Criteria A)       EC 61004-44     AC Port     V/m     3 (Criteria A)       EC 61004-45     Comton AC Port     KV     4 (Level 4, Criteria A)       EC 61000-4-5     CH1     KV     2 (Level 4, Criteria A)       EC 61000-4-5     CH2 (Criteria C)     KV     2 (Level 4, Criteria A)       EC 61000-4-5     (AC input common mode)     KV     2 (Level 4, Criteria A)       (Conductad Susceptibility)     (Fan AU, Standby common mode)     V     10 (Level 3, Criteria A)       (Conductad Susceptibility)     (Fan AU, Standby common mode)     V     NA       (Conductad Susceptibility)     (Fan AU, Standby common mode)     V     NA       (Conductad Susceptibility)     (Fan AU, Standby common mode)     V     NA       (Conductad Susceptibility)     (Fan AU, Standby common mode)     V     NA       (Conductad Susceptibility)     (Fan AU, Standby common mode)     V	IEC61000-4-3	80 MHz to 2.7 GHz	V/m	10 (Level 3. Criteria A)	
EN 60601-12-22015 (Radiad Immunity to RF Wireless Communications Equipment (Table 9)     Immunity to RF Wireless Communications Equipment (Table 1, condition 13 requirements, Criteria A)       IEC 61200-4.4     AC Port     Vir     3 (Table 1, condition 13 requirements, Criteria A)       IEC 61200-4.4     AC Port     Vir     3 (Criteria A)       (Electrical Fast Transent Burst)     Fan Out, Standby Signal IO Port (Remote On/Off, AC, FAIL, DC, OK)     KV     2 (Level 4, Criteria A)       (EC 61000-4-6 (Conducted Susceptibility)     (AC Input common mode)     V     10 (Level 3, Criteria A)       (EC 61000-4-6 (Conducted Susceptibility)     (Fan Out, Standby common mode)     V     NA       (EC 61000-4-8 (Power Frequency Mag, Field)     When exited factory (Buk cap life degradation not considered)     -     Class 3       (Voltage dips / Interruption)     Vis for 105 cycle     Criteria     ATT     (Cael 4, Criteria A)       (Voltage dips / Interruption)     Vis for 250300 cycles     Criteria     ATT     (Cael 4, Criteria A)       (Voltage dips / Interruption)     Vis for 250	(Radiated Immunity)	2.7 GHz to 6 GHz	V/m	10 (Level 3. Criteria A)	
(Radiated Immunity)     (Table 9)     Image: Constraint of the constrai	EN 60601-1-2:2015	Immunity to RF Wireless Communications Equipment	-	All Criteria, Criteria A	
CISPR 35     1.8 GHz to 5 GHz     Vim     3 (Table 1, condition 1.3 requirements, Criteria A)       IEC 61204-32 2000     900 MHz (Keyed Carrier)     Vim     3 (Table 1, condition 1.3 requirements, Criteria A)       IEC 61000-4.4     AC Port     KV     4 (Level 4, Criteria A)       (Electrical Fast Transient Burst)     Fan Out, Standby     KV     NA       Signal I/D Port (Remote On/Off, AC_FAIL_DC_OK)     KV     V     2 (Level 4, Criteria A)       IEC 61000-4-5 (Surge)     (AC input common mode)     KV     10 (Level 3, Criteria A)       IEC 61000-4-6 (ICC output common mode)     V     10 (Level 3, Criteria A)     V       IEC 61000-4-6 (ICC output common mode)     V     NA     10 (Level 3, Criteria A)       IEC 61000-4-8 (Syrgel)     (Conductad Susceptibility)     (Fan Out, Standby common mode)     V     NA       IEC 61000-4-11 (Voltage dips / Interruption)     (Vinter acted factory (Bulk cap life degradation not considered)     -     Class 3       (Voltage dips / Interruption)     When exited factory (Bulk cap life degradation not considered)     -     Class 3       (Voltage dips / Interruption)     (Vinter acted factory (Bulk cap life degradation not considered)     -     -	(Radiated Immunity)	(Table 9)			
IEC 61204-3: 2000     900 MHz (Keyed Carrier)     Vim     3 (Criteria A)       IEC61000-4-4     AC Port     KV     4 (Level 4, Criteria A)       (Electrical Fast Transient Bursh)     Fan Out, Standby     KV     N/A       (Electrical Fast Transient Bursh)     GAC input common mode)     KV     N/A       (Electrical Fast Transient Bursh)     GAC input common mode)     KV     1 (Level 4, Criteria A)       (EleCf1000-4-5     (Griput norman mode)     KV     1 (Level 3, Criteria A)       (Conducted Susceptibility)     (Griput common mode)     V     10 (Level 3, Criteria A)       (Conducted Susceptibility)     (Granu A, Standby common mode)     V     NA       (EleC61000-4-8)     (Fan Out, Standby common mode)     V     NA       (Coducted Susceptibility)     (Fan Out, Standby common mode)     V     NA       (EleC61000-4-8)     (Fan Out, Standby common mode)     V     NA       (EleC61000-4-11     (Vois for 0.5 cycle     Criteria     A       (Voltage dips / Interruption)     0% for 0.5 cycle     Criteria     A       (Voltage dips / Interruption)     0% for 250/300 cycles     Criteria	CISPR 35	1.8 GHz to 5 GHz	V/m	3 (Table 1, condition 1.3 requirements, Criteria A)	
IEC61000-4.4 AC Port KV 4 (Level 4, Criteria A)   (Electrical Fast Transient Burst) Fan Out, Standby KV 2 (Level 4, Criteria A)   (Electrical Fast Transient Burst) Fan Out, Standby KV 2 (Level 4, Criteria A)   (EC61000-4-5 (Surge) (AC input common mode) (AC input common mode) KV 2 (Level 3, Criteria A)   (EC61000-4-6 (Contput common mode) KV 1 (Level 3, Criteria A)   (Conducted Susceptibility) (AC input common mode) V 10 (Level 3, Criteria A)   (EC61000-4-8 (Conducted Susceptibility) (Signal I/O common mode) V 10 (Level 3, Criteria A)   (EC61000-4-8 (Conducted Susceptibility) (Signal I/O common mode) V NA   (EC61000-4-8 (Power Frequency Mag, Field) V NA Class 3   (Voltage dips / Interruption) 0% for 0.5 cycle Criteria A S175W, B >175W   (Voltage dips / Interruption) 0% for 250/300 cycles Criteria A   (Voltage dips / Interruption) 0% for 10/20 cycles Criteria A   (Voltage dips / Interruption) 0% for 250/300 cycles Criteria A   (Voltage dips / Interruption) 0% for 250/300 cycles Criteria A   (Voltage dips / Interruption) 0% for 1 cycle Crit	IEC 61204-3: 2000	900 MHz (Keved Carrier)	V/m	3 (Criteria A)	
CH1000000000000000000000000000000000000	IEC61000-4-4	AC Port	kV	4 (Level 4. Criteria A)	
(Electrical Fast Transient Burst)     Fan Out, Standby Signal I/O Port (Remote On/Off, AC_FAIL, DC_OK)     KV     NA       IEC61000-4-5 (Surge)     (AC input normal mode) (AC input normal mode)     KV     2 (Level 4, Criteria A)       IEC61000-4-6 (Conduct d Susceptibility)     (AC input normal mode) (AC input normal mode)     V     10 (Level 3, Criteria A)       IEC61000-4-6 (Conduct d Susceptibility)     (AC input normal mode)     V     10 (Level 3, Criteria A)       (Conduct d Susceptibility)     (Fan Out, Standby ommon mode)     V     NA       (EC61000-4-8 (Power Frequency Mag, Field)     When exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle     -     Class 3       (Voltage dips / Interruption)     0% for 1 cycle     Criteria 0% for 25/00 cycles     Criteria 100Vac: A<500W, B>50W; 220Vac: A       (Voltage dips / Interruption)     0% for 25/00 cycles     Criteria 0% for 25/00 cycles     Criteria 100Vac: A<500W, B>200W; 220Vac: A       (Voltage dips / Interruption)     0% for 25/00 cycles     Criteria 0% for 25/00 cycles     Criteria 100Vac: A<500W, B>200W; 220Vac: A       (Voltage dips / Interruption)     0% for 25/00 cycles     Criteria 0% for 25/00 cycles     Criteria 100Vac: A<500W, B>150W; 220Vac: A       (Voltage dips / Interruption)     0% for 25/00 cycles		CH1	kV	2 (Level 4, Criteria A)	
Instruction     Signal I/O Port (Remote On/Off, AC_FAIL, DC_OK)     RV     2 (Level 4, Criteria A)       IEC61000-4-5 (Surge)     (AC input common mode) (AC input common mode)     kV     1 (Level 3, Criteria A)       IEC61000-4-6     (DC output common mode) (Conducted Susceptibility)     V     10 (Level 3, Criteria A)       IEC61000-4-6     (DC output common mode) (Conducted Susceptibility)     V     10 (Level 3, Criteria A)       IEC61000-4-8     (Power Frequency Mag, Field)     V     NA       IEC61000-4-8     (Power Frequency Mag, Field)     -     Cass 3       0% for 1 cycle     Criteria     A     -     Cass 3       1EC61000-4-11     (% for 10/12 cycles     Criteria     A     -       (Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     A     -       10/04c: A<50W, De50W; 220Vac: A	(Electrical East Transient Burst)	Fan Out, Standby	kV	N/A	
IEC61000-4-5 (Surge)     (AC input common mode) (AC input common mode)     IV     2 (Level 3, Criteria A)       IEC61000-4-5 (Conducted Susceptibility)     (AC input common mode) (Conducted Susceptibility)     V     10 (Level 3, Criteria A)       (ICC output common mode)     V     10 (Level 3, Criteria A)       (ICC output common mode)     V     10 (Level 3, Criteria A)       (ICC output common mode)     V     NA       (ICC output common mode)     V     NA       (IEC61000-4-8 (Conducted Susceptibility)     (Fan Out, Standby common mode)     V     NA       (IEC61000-4-8 (Power Frequency Mag. Field)     When exited factory (Bulk cap life degradation not considered)     -     Class 3       (Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     A 175/W, B >175/W       (Voltage dips / Interruption)     0% for 25/30 cycles     Criteria     A 100/ac: A 550W, B>50W; 220/ac: A       (Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     A 175/W       (Voltage dips / Interruption)     0% for 25/30 cycles     Criteria     A 175/W       (Voltage dips / Interruption)     0% for 25/30 cycles     Criteria     B       (Voltage dips / Interrupti		Signal I/O Port (Remote On/Off AC FAIL DC OK)	kV	2 (Level 4 Criteria A)	
IEC61000-4.5 (Surge)     CAC input normal mode)     KV     1 (Level 3, Criteria A)       IEC61000-4.6 (CC output common mode)     V     10 (Level 3, Criteria A)     10 (Level 3, Criteria A)       (Conducted Susceptibility)     (Fan Out, Standby common mode)     V     N/A       (Conducted Susceptibility)     (Fan Out, Standby common mode)     V     N/A       (IEC61000-4.8 (Power Frequency Mag. Field)     Vene exited factory (Bulk cap life degradation not considered)     -     Class 3       Violage dips / Interruption)     0% for 1 cycle     Criteria     A     Stription (Stription (Strip		(AC input common mode)	kV	2 (Level 3 Criteria A)	
ICC6100-4-6 (Conducted Susceptibility)(AC input common mode) (Canducted Susceptibility)V10 (Level 3, Criteria A)ICC6100-4-6 (Conducted Susceptibility)(Fan Out, Standby common mode) (Fan Out, Standby common mode)VN/AIEC6100-4-7 (Power Frequency Mag. Field)VN/A(Level 4, Criteria A)IEC6100-4-8 (Power Frequency Mag. Field)VN/A(Level 4, Criteria A)IEC6100-4-11 (Voltage dips / Interruption)When exited factory (Bulk cap life degradation not considered) 0% for 1 cycle-Class 3IEC6100-4-11 (Voltage dips / Interruption)When exited factory (Bulk cap life degradation not considered) 0% for 1 cycle-Class 3IEC6100-4-12 (Voltage dips / Interruption)0% for 10/12 cycles 0% for 25/30 cyclesCriteria 100/ac: As150W, B>150W; 220/ac: AIEC6100-4-12 (Voltage dips / Interruption)0% for 20/300 cyclesCriteria 100/ac: As150W, B>150W; 220/ac: AIEC6100-4-2 (Voltage dips / Interruption)0% for 20/300 cyclesCriteria 100/ac: As150W, B>150W; 220/ac: AIEC6100-4-2 (Voltage dips / Interruption)0% for 1 cycle 0% for 25/30 cyclesCriteria 100/ac: As150W, B>150W; 220/ac: AIEC6100-4-2 (Voltage dips / Interruption)0% for 1 cycle 0% for 1 cycleCriteria 0IEC6100-4-2 (Voltage dips / Interruption)0% for 1 cycle 0% for 1 cycleCriteria 0IEC6100-4-2 (Voltage dips / Interruption)0% for 1 cycle 0% for 1 cycleCriteria 0IEC6100-4-2 (Voltage dips / Interruption)0% for 1 cycle 0% for 1 cycleCriteria <b< td=""><td>IEC61000-4-5 (Surge)</td><td>(AC input normal mode)</td><td>kV</td><td>1 (Level 3 Criteria A)</td></b<>	IEC61000-4-5 (Surge)	(AC input normal mode)	kV	1 (Level 3 Criteria A)	
IEC6100-4-6 (Conducted Susceptibility)     (DC output common mode) (Signal I/O common mode)     V     10 (Level 3, Criteria A)       IEC6100-4-8 (Power Frequency Mag. Field)     V     N/A     N/A       IEC6100-4-8 (Power Frequency Mag. Field)     V     N/A     Class 3       V(oltage dips / Interruption)     When exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle     -     Class 3       V(oltage dips / Interruption)     % for 1 cycle     Criteria     A     N       V(oltage dips / Interruption)     % for 250/30 cycles     Criteria     100/ac: A<50W, B>50W; 220/ac: A       0% for 250/300 cycles     Criteria     100/ac: A<510W, B>105W; 220/ac: A     100/ac: A<510W, B>105W; 220/ac: A       0% for 250/300 cycles     Criteria     100/ac: A<510W, B>105W; 220/ac: A     100/ac: A<510W, B>105W; 220/ac: A       0% for 250/300 cycles     Criteria     A     A       0% for 0.5 cycle     Criteria     A       0% for 1 cycle     Criteria     A       0% for 1 cycle     Criteria     A       0% for 1 cycle     Criteria     B       1EC61000-6-2     0% for 10 r/s cycles     Criteria     B		(AC input common mode)	V	10 (Level 3, Criteria A)	
ICC Order Case Production   ICC Order Case Production   ICC Order Case Production   ICC Order Case Production     ICC Order Case Production   (Grand Cut, Standby common mode)   V   N/A     IEC Of 1000-4-8   (Power Frequency Mag, Field)   //   N/A     IEC Of 1000-4-18   When exited factory (Bulk cap life degradation not considered)   -   Class 3     O% for 0.5 cycle   O% for 1 cycle   Criteria   A   100Vac: As50W, B>175W     (Voltage dips / Interruption)   0% for 1 cycle   Criteria   100Vac: As50W, B>00W, B>	IEC61000-4-6	(DC output common mode)	V	10 (Level 3, Criteria A)	
ICCG10004-38 (Power Frequency Mag. Field)   V   N/A     IECG61000-4-8 (Power Frequency Mag. Field)   Vhen exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle   -   Class 3     IECG61000-4-11 (Voltage dips / Interruption)   0% for 0.5 cycle   Criteria 4   A   -     Voltage dips / Interruption)   0% for 10/12 cycles 70% for 25/30 cycles   Criteria 80% for 25/300 cycles   Criteria 100Vac: A<50W, B>50W, 220Vac: A     IECG6001-1-2 (Voltage dips / Interruption)   0% for 250/300 cycles   Criteria 8   -   -     Vhen exited factory (Bulk cap life degradation not considered) 0% for 250/300 cycles   Criteria 100Vac: A<50W, B>175W   -     IECG6001-1-2 (Voltage dips / Interruption)   0% for 250/300 cycles   Criteria A   A   -     0% for 250/300 cycles   Criteria 0% for 250/300 cycles   Criteria A   A   -     IECG6100-6-2 (Voltage dips / Interruption)   0% for 10/12 cycles 70% for 250/300 cycles   Criteria B   A   -     IECG6100-6-2 (Voltage dips / Interruption)   0% for 200300 cycles   Criteria C   B   -     IECG6100-6-2 (Voltage dips / Interruption)   0% for 10/12 cycles 70% for 100 ms   Criteria C   C   -     IECG61000-6-2 (Voltage dips / Interruption)	(Conducted Suscentibility)	(Ear Out, Standby common mode)	V		
IEC61000-4-8 (Power Frequency Mag. Field)     When exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle     -     Class 3       IEC61000-4-11 (Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     A     A       Voltage dips / Interruption)     0% for 10/2 cycles     Criteria     A     Class 3       IEC60001-1-2 (Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     100/ac: A<50W, B>10W; 220Wa:: A       Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     100/ac: A<50W, B>20W; 220Wa:: A       Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     B       Voltage dips / Interruption)     0% for 250/300 cycles     Criteria     B       Voltage dips / Interruption)     0% for 1 cycle     Criteria     A       Voltage dips / Interruption)     0% for 1 cycle     Criteria     A       Voltage dips / Interruption)     0% for 10/12 cycles     Criteria     B       Voltage dips / Interruption)     0% for 25/30 cycles     Criteria     B       Voltage dips / Interruption)     0% for 10 cycle     Criteria     B       Voltage dips / Interruption)     0% for 10 cycles		(Signal I/O common mode)	V	N/A	
ILC0000-4-30 (Power Frequency Mag. Field)     When exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle     Am     (Level 4, Criteria A)       IEC61000-4-11 (Voltage dips / Interruption)     0% for 1.5 cycle     Criteria     A        0% for 1.0 cycle     Criteria     A      A       100/cc. A<550W, B >175W     Criteria     A     A       100/cc. A<550W, B >10W; 220Vac: A     OW     Toileria     100Vac: A<50W, B >10W; 220Vac: A       100/cc. A<500W, 500 cycles			v		
PrecedenciesWhen exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle-Class 3(Voltage dips / Interruption)0% for 1.0 ycleCriteriaA <175W, B >175W(Voltage dips / Interruption)0% for 1.0 ycleCriteria100Vac: A<50W, B>50W; 220Vac: A0% for 250/300 cyclesCriteria100Vac: A<5150W, B>150W; 220Vac: A0% for 250/300 cyclesCriteriaB0% for 0.5 cycleCriteriaA <175W, B >175W0% for 1.0 ycleCriteriaA <175W, B >175W0% for 250/300 cyclesCriteriaA <175W, B >175W0% for 250/300 cyclesCriteriaB1EC61000-6-20% for 1 cycleCriteria0% for 10/12 cyclesCriteriaB0% for 10/12 cyclesCriteriaB1EC61204-30% for 10/12 cyclesCriteria1005 cycle0% for 100 msCriteria1005 cycleCriteriaB1005 cycleCriteriaB1005 cycleCriteriaC1005 cycleCriteriaC1005 cycleCriteriaC1005 cycleCriteriaC1005 cycleCriteriaC1005 cycleCriteriaC1005 cycleCriteriaC1005 cycleCriteriaC<	(Power Frequency Mag. Field)		A/m	(Level 4, Criteria A)	
IEC61000-4-11 (Voltage dips / Interruption)0% for 0.5 cycleCriteriaA40% for 10/12 cyclesCriteria100/ac: A<50W, B>50W; 220/ac: A70% for 25030 cyclesCriteria100/ac: A<50W, B>50W; 220/ac: A80% for 250300 cyclesCriteriaB9% for 0.5 cycleCriteriaA9% for 0.5 cycleCriteriaA9% for 1 cycleCriteriaA9% for 250/300 cyclesCriteriaA9% for 250/300 cyclesCriteriaA9% for 1 cycleCriteriaA9% for 1 cycleCriteriaA9% for 250/300 cyclesCriteriaB1EC61000-6-20% for 1 cycleCriteria10% for 1 cycleCriteriaB100/ac: A<150W, B>150W; 220/ac: ACriteria100/ac: A<160W		When exited factory (Bulk cap life degradation not considered)	-	Class 3	
IEC61000-4-11     0% for 1 cycle     Criteria     A ≤175W, B >175W       (Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     100Vac: A≤50W, B>50W; 220Vac: A       70% for 25/30 cycles     Criteria     100Vac: A≤150W, B>150W; 220Vac: A       80% for 250/300 cycles     Criteria     100Vac: A≤150W, B>150W; 220Vac: A       80% for 250/300 cycles     Criteria     100Vac: A≤200W, B>200W; 220Vac: A       80% for 0 50/300 cycles     Criteria     B       Vhen exited factory (Bulk cap life degradation not considered)     -     -       0% for 2 50/300 cycles     Criteria     A ≤175W, B >175W       0% for 2 50/300 cycles     Criteria     A       0% for 2 50/300 cycles     Criteria     A ≤175W, B >175W       0% for 2 50/300 cycles     Criteria     A ≤175W, B >175W       0% for 2 50/300 cycles     Criteria     B       IEC61000-6-2     0% for 1 cycle     Criteria     B       (Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     B       (Voltage dips / Interruption)     40% for 10 ms     Criteria     C       1EC61204-3     0% for 20 000 ms     Criteria </td <td></td> <td>0% for 0.5 cycle</td> <td>Criteria</td> <td>A</td>		0% for 0.5 cycle	Criteria	A	
(Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     100Vac: A<50W, B>50W; 220Vac: A       70% for 25/30 cycles     Criteria     100Vac: A<150W, B>50W; 220Vac: A       80% for 250/300 cycles     Criteria     100Vac: A<200W, B>200W; 220Vac: A       IEC60601-1-2 (Voltage dips / Interruption)     0% for 250/300 cycles     Criteria     B       0% for 10/12 cycles     Criteria     B     -       (Voltage dips / Interruption)     0% for 250/300 cycles     Criteria     A       0% for 10/12 cycles     Criteria     A     -       0% for 10/2 cycles     Criteria     A       0% for 10/2 cycles     Criteria     A       0% for 10/2 cycles     Criteria     A       0% for 10/2 cycles     Criteria     100Vac: A<150W, B>150W; 220Vac: A       1EC61000-6-2     0% for 10/12 cycles     Criteria     B       (Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     C       1Voltage dips / Interruption)     0% for 25/30 cycles     Criteria     C       1EC61204-3 (Voltage dips / Interruption)     0% for 10 ms     Criteria     C       SEMI F47 </td <td>IEC61000-4-11</td> <td>0% for 1 cycle</td> <td>Criteria</td> <td>A≤175W, B&gt;175W</td>	IEC61000-4-11	0% for 1 cycle	Criteria	A≤175W, B>175W	
Field70% for 25/30 cyclesCriteria100Vac: A≤150W, B>150W; 220Vac: A80% for 250/300 cyclesCriteria100Vac: A≤200W, B>200W; 220Vac: AIEC60601-1-2 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaBWhen exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycleCriteriaA0% for 0.5 cycleCriteriaAA0% for 1 cycleCriteriaAS175W, B>150W; 220Vac: A0% for 250/300 cyclesCriteria100Vac: A≤150W, B>150W; 220Vac: A0% for 1 cycleCriteria100Vac: A≤150W, B>150W; 220Vac: A0% for 1 cycleCriteriaB1EC61000-6-2 (Voltage dips / Interruption)0% for 1 cycleCriteria0% for 1 cycleCriteriaB100Vac: A≤150W, B>150W; 220Vac: ACriteria1EC61204-3 (Voltage dips / Interruption)40% for 10/12 cyclesCriteria1EC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteria1EC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteria1EC61204-3 (Voltage dips / Interruption)0% for 10 msCriteria0% for 0.0 msCriteriaC0% for 0.0 msCriteria100Vac: A≤70W, B>70W; 220Vac: A0% for 0.0 sSi% for 0.0 sCriteria0% for 0.2 sCriteriaA0% for 0.5 sCriteriaA0% for 0.5 sCriteriaA0% for 0.5 sCriteriaA0% for 0.5 sCriteriaA0%	(Voltage dips / Interruption)	40% for 10/12 cycles	Criteria	100Vac: A≤50W, B>50W; 220Vac: A	
Identified80% for 250/300 cyclesCriteria100Vac: A≤200W, B>200W; 220Vac: AIBC60601-1-2 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaBWhen exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycleCriteriaA0% for 0.5 cycleCriteriaAA0% for 1 cycleCriteria100Vac: A≤150W, B>150W; 220Vac: A0% for 250/300 cyclesCriteria100Vac: A≤150W, B>150W; 220Vac: AIEC61000-6-2 (Voltage dips / Interruption)0% for 1 cycleCriteriaB0% for 1 cycleCriteriaB100 % for 1 cycleCriteriaB0% for 1 cycleCriteriaC0% for 1 cycleCriteriaB0% for 1 cycleCriteriaC0% for 1 cycleCriteriaC100 % for 1 cycleCriteriaB0% for 1 cycleCriteriaC0% for 1 cycleCriteriaC0% for 1 cycleCriteriaC0% for 25/30 cyclesCriteriaC100 % for 10 msCriteriaC0% for 10 msCriteriaC0% for 10 msCriteriaC0% for 0.0 msCriteriaC0% for 0.0 sCriteriaC0% for 0.0 sCriteriaA0% for 0.2 sCriteriaA0% for 0.2 sCriteriaA0% for 0.5 sCriteriaA0% for 0.5 sCriteriaA0% for 0.5 sCriteriaA <t< td=""><td></td><td>70% for 25/30 cycles</td><td>Criteria</td><td>100Vac: A≤150W, B&gt;150W; 220Vac: A</td></t<>		70% for 25/30 cycles	Criteria	100Vac: A≤150W, B>150W; 220Vac: A	
IEC60601-1-2 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaBWhen exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle0% for 0.5 cycleCriteriaA0% for 1 cycleCriteriaA70% for 25/30 cyclesCriteria100/ac: A≤150W, B>150W; 220/ac: AIEC61000-6-20% for 1 cycleCriteriaB0% for 1 cycleCriteriaBVoltage dips / Interruption)40% for 10/12 cyclesCriteriaB1EC61204-3 (Voltage dips / Interruption)0% for 25/30 cyclesCriteriaC1EC61204-3 (Voltage dips / Interruption)0% for 10 msCriteriaC25/50 for 00 msCriteriaCC30% for 10 msCriteria100/ac: A<570W, B>70W; 220/ac: A55/50 for 00 msCriteria170/ac: A<5240W; B>240W; 220/ac: A55/50 for 0.2 sCriteriaAC70% for 0.5 sCriteriaA80% for 1 sCriteriaA61000-4-12 (Ringwave Test)CriteriaC1EC61000-4-12 (Notage Fluctuations)CriteriaA61000-4-14 (Voltage Fluctuations)Criteria AC1EC61000-4-14 (Voltage Fluctuations)Criteria AC </td <td></td> <td>80% for 250/300 cycles</td> <td>Criteria</td> <td>100Vac: A≤200W, B&gt;200W; 220Vac: A</td>		80% for 250/300 cycles	Criteria	100Vac: A≤200W, B>200W; 220Vac: A	
IEC60601-1-2 (Voltage dips / Interruption)When exited factory (Bulk cap life degradation not considered) 0% for 0.5 cycle-(Voltage dips / Interruption)0% for 0.5 cycleCriteiaA0% for 1 cycleCriteia100Vac: A<150W, B>150W; 220Vac: A70% for 25/30 cyclesCriteia100Vac: A<150W, B>150W; 220Vac: AIEC61000-6-20% for 1 cycleCriteiaB100Vac: A<150W, for 1 cycle		0% for 250/300 cycles	Criteria	В	
IEC60601-1-2 (Voltage dips / Interruption)   0% for 0.5 cycle   Criteria   A     0% for 1 cycle   Criteria   A ≤175W, B >175W     70% for 25/30 cycles   Criteria   100Vac: A≤150W, B>150W; 220Vac: A     IEC61000-6-2   0% for 1 cycle   Criteria   B     (Voltage dips / Interruption)   40% for 10/12 cycles   Criteria   C     70% for 25/30 cycles   Criteria   C   C     (Voltage dips / Interruption)   40% for 10/12 cycles   Criteria   C     70% for 25/30 cycles   Criteria   C   C     (Voltage dips / Interruption)   40% for 10/12 cycles   Criteria   C     1EC61204-3 (Voltage dips / Interruption)   0% for 10 ms   Criteria   C     60% for 100 ms   Criteria   B   S     60% for 100 ms   Criteria   100Vac: A≤70W, B>70W; 220Vac: A     50% for 0.2 s   Criteria   100Vac: A≤240W, B>240W; 220Vac: A     70% for 1s   Criteria   A     80% for 1s   Criteria   A     IEC61000-4-12 (Ringwave Test)   F   Criteria   A     IEC61000-4-14 (Voltage Fluctuations)   F   Class 3 Cr		When exited factory (Bulk cap life degradation not considered)	-	-	
(Voltage dips / Interruption)0% for 1 cycle 70% for 25/30 cyclesCriteriaA ≤175W, B >175WIEC61000-6-20% for 1 cycleCriteriaB(Voltage dips / Interruption)40% for 10/12 cyclesCriteriaC70% for 25/30 cyclesCriteriaCC(Voltage dips / Interruption)40% for 10/12 cyclesCriteriaC1EC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaC0% for 250/300 cyclesCriteriaCC1EC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaC0% for 10 ms0% for 10 msCriteriaC0% for 100 ms0% for 100 msCriteriaB0% for 100 msCriteria100Vac: A≤70W, B>70W; 220Vac: A50% for 0.2 s50% for 0.2 sCriteria170Vac: A≤240W; B>240W; 220Vac: A50% for 1sCriteriaAC1EC61000-4-12 (Ringwave Test)-(Level 3, Criteria A)EN61000-4-14 (Voltage Eluctuations)Class 3 Criteria A	IEC60601-1-2	0% for 0.5 cycle	Criteria	A	
1000 Acc:     A≤150W, B>150W; 220Vac: A       IEC61000-6-2     0% for 250/300 cycles     Criteria     B       (Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     C       70% for 25/30 cycles     Criteria     C     C       (Voltage dips / Interruption)     40% for 10/12 cycles     Criteria     C       70% for 25/30 cycles     Criteria     C     C       70% for 25/30 cycles     Criteria     C     C       1EC61204-3 (Voltage dips / Interruption)     0% for 100 ms     Criteria     C       30% for 100 ms     Criteria     C     C       60% for 100 ms     Criteria     100Vac: A≤70W, B>70W; 220Vac: A       SEMI F47     50% for 5000 ms     Criteria     C       50% for 0.2 s     Criteria     170Vac: A≤240W, B>240W; 220Vac: A       70% for 1 s     Criteria     A       80% for 1 s     Criteria     A       1000-4-12 (Ringwave Test)     F     Class 3 Criteria A)	(voltage dips / interruption)	0% for 1 cycle	Criteria	A ≤175W, B >175W	
IEC61000-6-2 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaB(Voltage dips / Interruption)40% for 10/12 cyclesCriteriaC40% for 10/12 cyclesCriteriaCC70% for 25/30 cyclesCriteriaC1EC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteria0% for 10 ms0% for 10 msCriteria60% for 100 msCriteriaB95% for 5000 msCriteria50% for 0.2 sCriteria100/ac: A<70W, B>70W; 220/ac: A70% for 1.5 sCriteriaC80% for 1sCriteriaAIEC61000-4-12 (Ringwave Test)IIEN61000-4-14 (Voltage Fluctuations)I-Class 3 Criteria A-		70% for 25/30 cycles	Criteria	100Vac: A≤150W, B>150W; 220Vac: A	
IEC61000-6-2 (Voltage dips / Interruption)0% for 1 cycleCriteriaB40% for 10/12 cyclesCriteriaC70% for 25/30 cyclesCriteriaCIEC61204-3 (Voltage dips / Interruption)0% for 10 msCriteriaC30% for 10 msCriteriaCS60% for 100 msCriteria100Vac: A <s70w, b="">70W; 220Vac: A50% for 0.0 msCriteria100Vac: A<s70w, b="">70W; 220Vac: A50% for 0.2 sCriteria170Vac: A&lt;240W, B&gt;240W; 220Vac: A50% for 1sCriteriaAIEC61000-4-12 (Ringwave Test)-Level 3, Criteria A)EN61000-4-14 (Voltage Fluctuations)-Class 3, Criteria A</s70w,></s70w,>		0% for 250/300 cycles	Criteria	В	
(Voltage dips / Interruption)40% for 10/12 cyclesCriteriaC70% for 25/30 cyclesCriteriaCIEC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaC30% for 10 msCriteriaC60% for 100 msCriteria100Vac: A<70W, B>70W; 220Vac: ASEMI F4795% for 5000 msCriteriaC1EC61000-4-12 (Ringwave Test)CCriteriaAIEC61000-4-14 (Voltage Fluctuations)C-(Level 3, Criteria A)	IEC61000-6-2	0% for 1 cycle	Criteria	В	
Tow for 25/30 cyclesCriteriaCIEC61204-3 (Voltage dips / Interruption)0% for 250/300 cyclesCriteriaC30% for 10 msCriteriaCriteriaB60% for 100 msCriteria100Vac: A≤70W, B>70W; 220Vac: A50% for 5000 msCriteriaC50% for 0.2 sCriteria170Vac: A≤240W, B>240W; 220Vac: A70% for 1sCriteriaAIEC61000-4-12 (Ringwave Test)-(Level 3, Criteria A)EN61000-4-14 (Voltage Fluctuations)-Class 3, Criteria A	(Voltage dips / Interruption)	40% for 10/12 cycles	Criteria	С	
IEC61204-3 (Voltage dips / Interruption)   0% for 250/300 cycles   Criteria   C     30% for 10 ms   Criteria   B     60% for 100 ms   Criteria   100Vac: A≤70W, B>70W; 220Vac: A     50% for 5000 ms   Criteria   C     50% for 0.2 s   Criteria   C     70% for 0.5 s   Criteria   170Vac: A≤240W, B>240W; 220Vac: A     80% for 1s   Criteria   A     IEC61000-4-12 (Ringwave Test)   -   (Level 3, Criteria A)     EN61000-4-14 (Voltage Fluctuations)   -   Class 3 Criteria A	(	70% for 25/30 cycles	Criteria	C	
IEC61204-3 (Voltage dips / Interruption)     30% for 10 ms     Criteria     B       60% for 100 ms     Criteria     100Vac: A<70W, B>70W; 220Vac: A       95% for 5000 ms     Criteria     Criteria       95% for 0.2 s     Criteria     170Vac: A<240W, B>240W; 220Vac: A       70% for 0.5 s     Criteria     A       80% for 1s     Criteria     A       IEC61000-4-12 (Ringwave Test)     -     (Level 3, Criteria A)       EN61000-4-14 (Voltage Fluctuations)     -     Class 3 Criteria A		0% for 250/300 cycles	Criteria	C	
(Voltage dips / Interruption)     Control of the form     Criteria     100Vac: A≤70W, B>70W; 220Vac: A       60% for 100 ms     Criteria     100Vac: A≤70W, B>70W; 220Vac: A       SEMI F47     50% for 0.2 s     Criteria     170Vac: A≤240W, B>240W; 220Vac: A       70% for 0.5 s     Criteria     A       80% for 1s     Criteria     A       IEC61000-4-12 (Ringwave Test)     -     (Level 3, Criteria A)       EN61000-4-14 (Voltage Fluctuations)     -     Class 3 Criteria A	IEC61204-3	30% for 10 ms	Criteria	B	
SEMI F47     D5% for 5000 ms     Criteria     C       0% for 0.2 s     Criteria     170Vac: A≤240W, B>240W; 220Vac: A       70% for 0.5 s     Criteria     A       80% for 1s     Criteria     A       IEC61000-4-12 (Ringwave Test)     -     (Level 3, Criteria A)       EN61000-4-14 (Voltage Fluctuations)     -     Class 3 Criteria A	(Voltage dips / Interruption)	60% for 100 ms	Criteria		
SEMI F47     Som for 0.2 s 50% for 0.2 s 70% for 0.5 s 80% for 1s     Criteria Criteria     170Vac: A≤240W, B>240W; 220Vac: A       IEC61000-4-12 (Ringwave Test)     Criteria     A       IEN61000-4-14 (Voltage Fluctuations)     -     (Level 3, Criteria A)		95% for 5000 ms	Criteria	C	
SEMI F47 70% for 0.5 s Criteria A   IEC61000-4-12 (Ringwave Test) - (Level 3, Criteria A)   EN61000-4-14 (Voltage Fluctuations) - Class 3 Criteria A		50% for 0.2 s	Criteria	- 170Vac: A≤240W, B>240W <sup>,</sup> 220Vac <sup>,</sup> A	
IEC61000-4-12 (Ringwave Test) - (Level 3, Criteria A)   EN61000-4-14 (Voltage Fluctuations) - Class 3 Criteria A	SEMI F47	70% for 0.5 s	Criteria	A	
IEC61000-4-12 (Ringwave Test) - (Level 3, Criteria A) EN61000-4-14 (Voltage Fluctuations) - Class 3 Criteria A		80% for 1s	Criteria	A	
EN61000-4-14 (Voltage Fluctuations)	IEC61000-4-12 (Ringwave Test)		-	(Level 3. Criteria A)	
	EN61000-4-14 (Voltage Fluctuations)		-	Class 3, Criteria A	

### **Specifications**

OutputSwitching FrequencyHerSelected prequency from 25 to 300 (excluding burst motolege, output voltage, and output load. Frequencies vary with input voltage, output voltage and output load. Frequencies vary with input voltage, output voltage and output load. Frequencies vary with input voltage, output voltage and output load. Frequencies vary with input voltage, output voltage and output load. Frequencies vary with input voltage, output voltage, and output load. Frequencies variable voltage variable variab	Model		CUS250M
Switching Frequency     Http:     Variable frequency from 25 h 300 (excluding burst mode) for the PFC, DCD and flyback converters.       Line Regulation     %     Frequencies vary with input voltage, output voltage and output load.       Land Regulation     %         External Load Capacitance     %          Ripple & Noise     %     12/2 2033, 15% 16,860, 15% 440, 20% 220, 82% 440, 36% 3470, 45% 1,300        Ripple & Noise     %     12/2 2033, 15% 16,860, 15% 440, 20% 220, 82% 440, 36% 3470, 45% 1,300        Ripple & Noise     %     12/2 1203, 15% 16,860, 15% 440, 20% 220, 82% 440, 36% 3470, 45% 1,300        Immersion Coefficient     %C     12/2 2038, 15% 16,860, 15% 440, 20% 220, 82% 440, 36% 3470, 45% 1,400        Nonder     External load capacitance with extende on the the load is 10% of the rated current is for the PEC, Down Coefficient     %C        Minimum Load     %     110 to 170. Hiccap mode, automatic regulard        Overcontage Protection     %     115.40% of standard output voltage        Overcontage Protection     %     Opto-standard output voltage        Rando Softer Protection     %     Opto-standar	Output		
Tendencip of the constraint of the second	Switching Frequency	kHz	Variable frequency from 25 to 300 (excluding burst mode) for the PFC, DC-DC and flyback converters.
Line Regulation     %          (-0.10%) kad)        Load Regulation     %          (-1.00%) kad)        External Load Capacitance     %          (-1.00%) kad)        Riple & Noise     %          (12V nodel: -2, other valuages: -13, a 2: -02C, -2D houts mode when the load is <10% of the rated current in the context in	· · · · · · · · · · · · · · · · · · ·		Frequencies vary with input voltage, output voltage and output load.
Lacal Regulation     %     Get Comparison       External Load Capacitance     uF     12V 20,331,15V 166,001,004 99,402,24V 20,392,28V 44,60,36V 3470,48V 1,300       Ripple & Noise     %     12V model: <2, other voltages: <15 at -20°C, <2, ut hurst mode when the load is <10% of the rated current to action of the rate action of the rated current to action of the rate action of therat action of the rate	Line Regulation	%	<0.5 (85 - 264Vac)
External Load Capacitance     uF     12½ 20.331, 15½ 16660, 15½ 9,440, 24½ 229, 229, 249, 429, 439, 35¥, 3470, 48½ 1,300       Ripple & Noise     %     12V model: <2, other voltages: <1.5 at 20°C. <2 in burst mode when the load is <10% of the rated current External load capacitance will reduce the anythude.	Load Regulation	%	<1 (0 - 100% load)
Ripple & Noise     Profection     Pr	External Load Capacitance	uF	12V: 20,830, 15V: 16,660, 18V: 9,440, 24V: 2,290, 28V: 4,460, 36V: 3,470, 48V: 1,300
Rpple & Noise     %     12/2 model: <2, other voltages: <1.5 at .20°C. <2 in burst mode with the load is <10% of the rated current        Temperature Coefficient     %/PC     ±0.02       Minimum Load     -     Moniminum load capacitance wit reduce, automatic recovery       Overourent Protection     %     110 to 170. Hiccap mode, automatic recovery       Overourbage Protection     -     Latching (unit shutdown), cycle AC input or user mode on/off to reset       Overourbage (potication)     -     Latching (unit shutdown), cycle AC input or user mode on/off to reset       Remote Sense     -     None       Remote Co/Df (Opticnal)     -     Optic-isolated Inhibit.High = OFF, Low = ONE, Fable: High = ONL Low = OFF       Standby Voltage (Optional)     -     Optic-isolated signal, transistor is on when an output is good       AC_Fail signal (Optional)     -     Not possible       Environmental     -     Not possible       Operation Temperature (40°C shart-up)     °C     -20 to +85 with system forced air cooling. 70 maximum for fan version./F), see deraling ourves below       Storage Temperature (40°C shart-up)     °C     -20 to +85 with system forced air cooling. 70 maximum for fan version./F)       Operating Temperature (40°C shart-up)     °C     -20 to +8			<1 of nominal output for operating temperatures above 0°C
Temperature Coefficient     %PC     ±0.02       Minimur Load     -     No minimur load required       Overunet Protection     %     110 to 170. Hiccup mode, automatic recovery.       Overunet Protection     %     115-140% of standard output voltage       Overunet Protection     -     Latching (unit shutdown), oyde AG input or user mode on/off to reset       Nome     -     None       Remote Sense     -     None       Remote QuOff (Optional)     -     Optic-isolated Inhibit. High = OFF, Low = ON, Enable: High = ON, Low = OFF       Standby Volkage (Optional)     -     Optic-isolated signal, transistor is on when AC input is good       AC_Fail signal (Optional)     -     Optic-isolated signal, transistor is on when AC input is good       AC_Fail signal (Optional)     -     Not possible       Bernico (Optional)     -     Not possible       Generation     -     -     Not possible       Standby Volkage (Optional)     *     -     -       Operating Temperature (40°C start-up)     *C     -20 to +85 with system forced air cooling. Start setson, F)     -       Operating Temperature (40°C start-up)     *C     -20	Ripple & Noise	%	12V model: <2, other voltages: <1.5 at -20°C. <2 in burst mode when the load is <10% of the rated current External load capacitance will reduce the amplitude.
Minimum Load-•••Overoutlage Protection%110 to 170. Hiocup mode, automatic recoveryOveroutlage Protection-••Overoutlage Protection-••Brenote Sense••Remote Sense•••Standby Voltage (Optional)-••Out Sense••••Standby Voltage (Optional)-•••O. OK Signal (Optional)-••••O. OK Signal (Optional)-••••Opto-isolated signal, transistor is on when main output is good••••O. OK Signal (Optional)-•••••Parallel Operation-•••••••Opto-isolated signal, transistor is on when AC input is good••• <td>Temperature Coefficient</td> <td>%/°C</td> <td>±0.02</td>	Temperature Coefficient	%/°C	±0.02
Overcurrent Protection     %     110 to 170. Hiccup mode, automatic recovery       Overvoltage Protection     -     Institutionini, voide AC input or use remote on/off to reset       Overtemperature Protection     -     Institutionini, voide AC or use remote on/off to reset       Remote On/Off (optional)     -     Optio-isolated. Inhibit: High OFF, Low = ON, Enable: High = ON, Low = OFF, For any Supply (Standard)       Fan Supply (Standard)     -     Optio-isolated signal, transistoris on when AC input is good       AC, Fai signal (Optional)     -     Optio-isolated signal, transistoris on when AC input is good       AC, Fai signal (Optional)     -     Not possible       Parallel Operation     -     Not possible       Storage Temperature (40°C start-up)     *C     -20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below       Storage Temperature (40°C start-up)     *C     -20 to +85 with system forced air cooling (70 maximum for fan version /F)       Operating Femperature (40°C start-up)     *C     -20 to +85 with system forced air cooling (70 maximum for fan version /F)       Optional Storage Temperature (40°C start-up)     *C     -20 to +85 with system forced air cooling (70 maximum for fan version /F)       Option Temperature (40°C start-up)     *C     -20 t	Minimum Load	-	No minimum load required
Overvoltage Protection-1161-140% of standard output voltageOvertemperature Protection-Latching (unit shutdown), cycle AC input or use remote on/off to resetRemote Sense-NoneRemote On/Off (Optional)-Opto-isolated. Inhibit: High = OFF, Low = ONE, Eable: High = ON, Low = OFFSandby Voltage (Optional)-Opto-isolated signal, transistor is on when main output is goodDC. OK Signal (Optional)-Opto-isolated signal, transistor is on when AC input is goodAC_Fail signal (Optional)-Opto-isolated signal, transistor is on when AC input is goodAC_Fail signal (Optional)-Not possibleBerneton-Not possibleString Perature (ArC Start-up)*Not possibleDerating Temperature (ArC Start-up)*C-20 to +85 with system forced air cooling (70 maximum for fan version /F)Opticating Humidty (ron condensing)%RHS -95 (15 - 90 to /F fan version)Pollution Degree-PD2 duaterial group IIIbCooling-Input to Ground 1.500 (1xMOPP). Input to Output 4.000 (2xMOPP), output to Ground 1.500 (1xMOPP)Vibration (non operating)2G (0pen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305Store (WuLxH)gOpen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305WeightgOpen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305Store (WuLxH)mmCover (/A): 64 x 1192 x 30.5Store (WuLxH)mmCover (/A): 64 x 1192 x 43.5Store (WuLxH)mmCover (/A): 64 x 1192 x 43.5Store (W	Overcurrent Protection	%	110 to 170. Hiccup mode, automatic recovery
Overlanger function     - I     Latching (unit shutdown), cycle AC or use remote on/off to reset       Overlamperature Protection     -     Latching, cycle AC or use remote on/off to reset       Remote Sense     -     None       Remote Sense     -     Opto-isolated. Inhibit: High = OFF, Low = ON, Low = OFF       Standby Voltage (Optional)     -     -     Stordby Voltage (Optional)       Co. X Signal (Optional)     -     Opto-isolated signal, transistor is on when main output is good       DC, CK Signal (Optional)     -     Opto-isolated signal, transistor is on when AC input is good       DC, CK Signal (Optional)     -     Not possible       Series Operation     -     Not possible       Environmental     -     Not possible       Correging Temperature (40°C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below       Storage Temperature     °C     -     PD by Maximum for fan version /F)       Operating Humidity (non condensing)     %RH     -     So to (70 maximum for fan version /F)       Pollution Degree     -     PD2 Material group IIIb     Contrection rotrecal air cousing. See derating curves below	Oven oltage Protection	_	115-140% of standard output voltage
Overtemperature Protection     -     Latching, cycle AC or use remote on/off to reset       Remote On/Off (Optional)     -     Opto-isolated. Inhibit: High = OFF, Low = ON, Enable: High = ON, Low = OFF       Standby Voltage (Optional)     -     Opto-isolated. Inhibit: High = ON, Enable: High = ON, Low = OFF       Doc OK Signal (Optional)     -     Opto-isolated signal, transistor is on when main output is good       DC_ CK Signal (Optional)     -     Opto-isolated signal, transistor is on when AC input is good       DC_ OK Signal (Optional)     -     Opto-isolated signal, transistor is on when AC input is good       DC_ Flai signal (Optional)     -     Not possible       Straige Operation     -     Not possible       Environmental     -     -       Operating Temperature (-40°C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F)       Operating Temperature (-40°C start-up)     °C     -20 to +85 with system forced air cooling (71 maximum for fan version /F)       Operating Temperature (-40°C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F)       Operating Humidity (non condensing)     %C     -20 to +85 with system forced air cooling (71 maximum for fan version /F)       Polluton Degree <td>Overvoltage i Totection</td> <td></td> <td>Latching (unit shutdown), cycle AC input or use remote on/off to reset</td>	Overvoltage i Totection		Latching (unit shutdown), cycle AC input or use remote on/off to reset
Remote Sense     -     Internet None       Remote On/Off (Optional)     -     Opto-isolated. Inhibit: High = OFF, Low = ON, Enable: High = ON, Low = OFF       Standby Voltage (Optional)     -     Opto-isolated signal, transistor is on when main output is good       DC_OK Signal (Optional)     -     Opto-isolated signal, transistor is on when AC input is good       AC_Fail signal (Optional)     -     Opto-isolated signal, transistor is on when AC input is good       Parallel Operation     -     Opto-isolated signal, transistor is on when AC input is good       Parallel Operation     -     Opto-isolated signal, transistor is on when AC input is good       Storage Temperature (-40° C start-up)     °C     -     Opto-isolated accoling (70 maximum for fan version /F).       Operating Temperature (-40° C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F).       Operating Humidity (non condensing)     %RH     5 - 95 (15 - 90 for /F fan version)     POIL       Pollution Degree     -     Convection, conduction or forced air cooling. See derating curves below     Attitude       Attitude     m     Gonvection, conduction or forced air cooling. See derating curves below     Attitude       Stock (non operating)     -     2G,	Overtemperature Protection	-	Latching, cycle AC or use remote on/off to reset
Remote On/Off (Optional)     -     Opto-isolated. Inhibit: High = OFF, Low = ON, Enable: High = ON, Low = OFF       Standby Voltage (Optional)     -     0     5000000000000000000000000000000000000	Remote Sense	-	None
Standby Voltage (Optional)     -     Gene Style       Fan Supply (Standard)     -     0.011.41/0.5A       DC_OK Signal (Optional)     -     0.0to-isolated signal, transistor is on when main output is good       AC_Fall signal (Optional)     -     0.0to-isolated signal, transistor is on when AC input is good       Parallel Operation     -     Not possible       Series Operation     -     0.0to-isolated signal, transistor is on when AC input is good       Operating Temperature (40°C start-up)     °C     -20 to +85 wth system forced air cooling (70 maximum for fan version /F) see derating curves below       Storage Temperature (40°C start-up)     °C     -20 to +85 wth system forced air cooling (70 maximum for fan version /F)       Operating Humidity (non condensing)     %RH     5 -95 (15 -90 f/F fan version)       Pollution Degree     -     0.0torvection, conduction of forced air cooling. See derating curves below       Altitude     m     So00     Input to Ground 1,500 (1xMOPP). Input to Output,4000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MQ     >100 at 25°C, 70%RH & 500VDC     Voltarts in (non operating)       Vibration (non operating)     -     2.0.500Hz tor 1 hour     So00       Size (WkLxH)	Remote On/Off (Optional)	-	Opto-isolated. Inhibit: High = OFF, Low = ON, Enable: High = ON, Low = OFF
Fan Supply (Standard)     - •     11.4V 0.5A       DC_OK Signal (Optional)     - •     Opto-isolated signal, transisitor is on when main output is good       AC_Fail signal (Optional)     - •     Not possible       Parallel Operation     - •     Not possible       Series Operation     - •     Not possible       Furthronmental     -     -       Operating Temperature (40°C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below       Storage Temperature     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F).       Operating Humidity (non condensing)     %RH     5 - 95 (15 - 90 for /F fan version)       Pollution Degree     -     Convection, conduction or focult air cooling. See derating curves below       Altitude     m     fonut of 5,000       Withstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MQ     -     20,010 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     g     Open frame: 275, A: 320, /C: 275, /F: 345, /L: 305       Size (WxLxH)     g	Standby Voltage (Optional)	-	5V 0.1A
DC. OK Signal (Optional)     - I     Opto-isolated signal, transisitor is on when main output is good       AC. Fai signal (Optional)     -     Opto-isolated signal, transisitor is on when AC input is good       Parallel Operation     -     Not possible       Series Operation     -     Not possible       Environmental     -     -       Operating Temperature (-40°C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below       Storage Temperature     °C     -40 to +85 (70 maximum for fan version /F)       Operating Humidity (non condensing)     %RH     -5 -95 (1-9 hor /F fan version)       Pollution Degree     -     Convection, conduction or forced air cooling, 2000       Vithstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MQ     >100 at 25°, 70%RH & 500VDC       Vibration (non operating)     -     -       Shock (non operating)     -     -       Stord (non operating)     -     -       Size (WxLxH)     g     Open frame: 275 /A: 320, /C: 275 /F: 345 /U: 305       Size (WxLxH)	Fan Supply (Standard)	-	11.4V 0.5A
AC_Fail signal (Optional)     -     Optio-isolated signal, transistior is on when AC input is good       Parallel Operation     -     Not possible       Series Operation     -     Not possible       Environmental     -     -       Operating Temperature (-40°C start-up)     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below       Storage Temperature     °C     -20 to +85 with system forced air cooling (70 maximum for fan version /F).       Operating Humidity (non condensing)     %RH     -     -       Pollution Degree     -     Convection, conduction or forced air cooling. See derating curves below       Altitude     m     5.000     -       Vibration (non operating)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Vibration (non operating)     -     -     2.6.10-500Hz for 1 hour       Shock (non operating)     -     -     2.6.10-500Hz for 1 hour       Shock (non operating)     g     Open frame: 275, /R: 320, /C: 275, /F: 345, /U: 305       Size (WxLxH)     mm     Mm     Cover (A); 64 x 119, 2x 39.5       Size (WxLxH)     mm </td <td>DC_OK Signal (Optional)</td> <td>-</td> <td>Opto-isolated signal, transisitor is on when main output is good</td>	DC_OK Signal (Optional)	-	Opto-isolated signal, transisitor is on when main output is good
Parallel Operation-Not possibleSeries OperationEnvironmentalOperating Temperature (40°C start-up)°C-20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves belowStorage Temperature°C-20 to +85 with system forced air cooling (70 maximum for fan version /F)Operating Temperature°C-40 to +85 (70 maximum for fan version /F)Operating Humidity (non condensing)%RH5 - 95 (15 - 90 for /F fan version)Pollution Degree-Cooling-Convection, conduction or forced air cooling. See derating curves belowAltitudem5,000Vithstand Voltage (For 1 minute)VacInput to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)Vibration (non operating)-2G, 10-500Hz for 1 hourShock (non operating)-2G, 00-500Hz for 1 hourVibration (non operating)-2Size (WxLxH)gOpen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305Size (WxLxH)mmCover (/A) is 4x 119.2 x 43Size (WxLxH)inchesGopen frame: 2.8 x 101.6 x 39.5Size (WxLxH)inches-Size (WxLxH)inchesInput: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 8783-0833Warrantyyrs55	AC_Fail signal (Optional)	-	Opto-isolated signal, transisitor is on when AC input is good
Series Operation-Not possibleEnvironmentalOperating Temperature (40°C start)°C-20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves belowStorage Temperature°C-40 to +85 (70 maximum for fan version /F)Operating Humidity (non condensing)%RH-Pollution DegreeCoolingAltitudem-Cooling ResistanceMQ-Isolation ResistanceMQVibration (non operating)-Shock (non operating)-Vibration (non operating)-MithygOthergWeightgSize (WxLxH)mmSize (WxLxH)mmSize (WxLxH)ncheeseSize (WxLxH)remeSize (WxLxH)reme<	Parallel Operation	-	Not possible
EnvironmentalwOperating Temperature (40°C start-up)°C20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves belowStorage Temperature°C40 to +85 (70 maximum for fan version /F)Operating Humidity (non condensing)%RS-595 (15-90 for /F fan version)Pollution Degree-PD2 Material group IIIbCooling-Convection, conduction or forced air cooling. See derating curves belowAltitudem5,000Withstand Voltage (For 1 minute)VacInput to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)Isolation ResistanceMΩ>100 at 25°C, 70%RH & 500VDCVibration (non operating)-2G, 10-500Hz for 1 hourShock (non operating)-2G, 00 pen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305WeightgOpen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305Size (WxLxH)mmCover (/A): 64 x 119.2 x 39.5Size (WxLxH)inchesGSize (WxLxH)inchesGSize (WxLxH)inchesSize (WxLxH)inchesS	Series Operation	-	Not possible
Operating Temperature (40°C start-up)     °C <i>20</i> to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below       Storage Temperature     °C <i>20</i> to +85 with system forced air cooling (70 maximum for fan version /F).       Operating Humidity (non condensing)     %RH     5 - 95 (15 - 90 for /F fan version)       Pollution Degree     -     Operating Emperature (40°C start)     %RH       Pollution Degree     -     Operating Emperature (40°C start)     %RH       Cooling     -     Ocnowection, conduction or forced air cooling. See derating curves below       Altitude     m     5.000     Ill       Vithstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4.000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MQ     ->1000 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     Score (1,0000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Vibration (non operating)     -     Generating Score (7,078RH & 500VDC       Vibration (non operating)     -     Generating Score (7,078RH & 500VDC       Vibration (non operating)     -     Generating Score (7,078RH & 500VDC       Size (WxLxH)     g     Gopen frame:	Environmental		
Storage Temperature     °C     -40 to +85 (70 maximum for fan version /F)       Operating Humidity (non condensing)     %RH     5 - 95 (15 - 90 for /F fan version)       Pollution Degree     -     PO2 Material group IIIb       Cooling     -     Convection, conduction or forced air cooling. See derating curves below       Altitude     m     5,000       Withstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MQ     >100 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     2C, 10-500Hz for 1 hour       Shock (non operating)     -     0     30G, 11ms half sine       Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Size (WxLxH)     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     Cover (/A): 64 x 119.2 x 43.5       Size (WxLxH)     nches     Gpen frame: 252 x 4.69 x 1.56       Size (WxLxH)     nches     Gpen frame: 252 x 4.69 x 1.56       Size (WxLxH)     nches     Gpen frame: 252 x 4.69 x 1.56       Size (WxLxH)     nchers     Gpen frame: 252 x 4.69 x 1.56	Operating Temperature (-40°C start-up)	°C	-20 to +85 with system forced air cooling (70 maximum for fan version /F), see derating curves below
Operating Humidity (non condensing)%RHSecond Second	Storage Temperature	°C	-40 to +85 (70 maximum for fan version /F)
Pollution Degree-PD2 Material group IIIbCooling-Convection, conduction or forced air cooling. See derating curves belowAltitudem5,000Withstand Voltage (For 1 minute)VacInput to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)Isolation ResistanceMΩ>100 at 25°C, 70%RH & 500VDCVibration (non operating)-2G, 10-500Hz for 1 hourShock (non operating)-0OthergOpen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305WeightgOpen frame: 50.8 x 101.6 x 39.5Size (WXLxH)mmCover (/A): 64 x 119.2 x 43Size (WXLxH)mmCover (/A): 64 x 119.2 x 43Size (WXLxH)InchesGSize (WXLxH)InchesInchesSize (WXLXH)InchesInches	Operating Humidity (non condensing)	%RH	5 - 95 (15 - 90 for /F fan version)
Cooling     - ο     Convection, conduction or forced air cooling. See derating curves below       Altitude     m     5,000       Withstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MΩ     >100 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     2G, 10-500Hz for 1 hour       Shock (non operating)     -     9       Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     Gover (/A): 64 x 119.2 x 43.       Size (WxLxH)     mm     Gover (/A): 64 x 119.2 x 43.       Size (WxLxH)     Inches     Inches     Inches     Inches       Gover (/A): 2.52 x 4.69 x 1.56     Cover (/A): 2.52 x 4.69 x 1.59     Size (VxLxH)     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833	Pollution Degree	-	PD2 Material group IIIb
Attitude     m     5,000       Withstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MΩ     >100 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     2G, 10-500Hz for 1 hour       Shock (non operating)     -     2G, 10-500Hz for 1 hour       Weight     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     G       Size (WxLxH)     mm     Cover (/A): 64 x 119.2 x 43       Size (WxLxH)     mm     G       Size (WxLxH)     Inches     G       Size (WxLxH)     Inches     G       Marrier     Size (WxLxH)     Inches       Marrier     Inches     G       Marrier     Size (WxLxH)     Inches	Cooling	-	Convection, conduction or forced air cooling. See derating curves below
Withstand Voltage (For 1 minute)     Vac     Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)       Isolation Resistance     MΩ     >100 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     2G, 10-500Hz for 1 hour       Shock (non operating)     -     30G, 11ms half sine       Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     Goven (/A): 64 x 119.2 x 30.5       Size (WxLxH)     mm     Cover (/A): 64 x 119.2 x 43.5       Size (WxLxH)     Inches     Goven (/A): 2.52 x 4.69 x 1.56       Size (WxLxH)     Inches     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833	Altitude	m	5,000
Isolation Resistance     MΩ     >100 at 25°C, 70%RH & 500VDC       Vibration (non operating)     -     2G, 10-500Hz for 1 hour       Shock (non operating)     -     30G, 11ms half sine       Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     Cover (/A) : 64 x 119.2 x 39.5       Size (WxLxH)     mm     Cover (/A) : 64 x 119.2 x 43       Size (WxLxH)     Inches     Cover (/A) : 64 x 119.2 x 43       Size (WxLxH)     Inches     Cover (/A) : 2.52 x 4.69 x 1.56       Size (WxLxH)     Inches     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     State 10.1 c M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833	Withstand Voltage (For 1 minute)	Vac	Input to Ground 1,500 (1xMOPP), Input to Output 4,000 (2xMOPP), Output to Ground 1,500 (1xMOPP)
Vibration (non operating)     -     2G, 10-500Hz for 1 hour       Shock (non operating)     -     30G, 11ms half sine       Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Size (WxLxH)     mm     G       Size (WxLxH)     mm     Cover (/A): 64 x 119.2 x 39.5       Size (WxLxH)     mm     Cover (/A): 64 x 119.2 x 43       Fan (/F): 64 x 119.2 x 43.     Fan (/F): 64 x 119.2 x 43.       Size (WxLxH)     Inches     Open frame: 2.52 x 4.69 x 1.56       Cover (/A): 2.52 x 4.69 x 1.69     Cover (/A): 2.52 x 4.69 x 1.69       Fan (/F): 2.52 x 4.69 x 2.39     Fan (/F): 2.52 x 4.69 x 2.39       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5	Isolation Resistance	MΩ	>100 at 25°C, 70%RH & 500VDC
Shock (non operating)     -     30G, 11ms half sine       Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     Cover (/A) : 64 x 119.2 x 39.5       Size (WxLxH)     mm     Cover (/A) : 64 x 119.2 x 60.6       Size (WxLxH)     Inches     Cover (/A) : 2.52 x 4.69 x 1.56       Size (WxLxH)     Inches     Inches     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     Size (WxLxH)     yrs     Size (WxLxH)	Vibration (non operating)	-	2G, 10-500Hz for 1 hour
Other     g     Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305       Weight     g     Open frame: 50.8 x 101.6 x 39.5       Size (WxLxH)     mm     G       Size (WxLxH)     mm     Cover (/A): 64 x 119.2 x 43       Size (WxLxH)     mm     G       Minches     G     Cover (/A): 2.52 x 4.69 x 1.56       Cover (/A): 2.52 x 4.69 x 1.69     Cover (/A): 2.52 x 4.69 x 1.69       Size (WxLxH)     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     Size (MxLxH)	Shock (non operating)	-	30G, 11ms half sine
WeightgOpen frame: 275, /A: 320, /C: 275, /F: 345, /U: 305BarageMemGOpen frame: 50.8 x 101.6 x 39.5 U channel : 64 x 119.2 x 39.5 Cover (/A) : 64 x 119.2 x 43 Fan (/F) : 64 x 119.2 x 60.6BarageArageArageOpen frame: 2 x 4 x 1.56 	Other		
Size (WxLxH)MmOpen frame : 50.8 x 101.6 x 39.5 U channel : 64 x 119.2 x 39.5 Cover (/A) : 64 x 119.2 x 43 Fan (/F) : 64 x 119.2 x 60.6Size (WxLxH)InchesCover (/A) : 64 x 119.2 x 60.6 Open frame: 2 x 4 x 1.56 U channel : 2.52 x 4.69 x 1.56 Cover (/A) : 2.52 x 4.69 x 1.69 Fan (/F) : 2.52 x 4.69 x 2.39Connectors-Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833Warrantyyrs5	Weight	g	Open frame: 275, /A: 320, /C: 275, /F: 345, /U: 305
Size (WxLxH)     mm     U channel : 64 x 119.2 x 39.5       Size (WxLxH)     Cover (/A) : 64 x 119.2 x 43       Size (WxLxH)     Inches     Cover (/A) : 64 x 119.2 x 60.6       Size (WxLxH)     Inches     Cover (/A) : 2.52 x 4.69 x 1.56       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5			Open frame : 50.8 x 101.6 x 39.5
Size (WXLXH)     IIIII     Cover (/A): 64 x 119.2 x 43       Fan (/F): 64 x 119.2 x 60.6     Open frame: 2 x 4 x 1.56       Jize (WxLxH)     Inches     Cover (/A): 2.52 x 4.69 x 1.56       Size (WxLxH)     Inches     Cover (/A): 2.52 x 4.69 x 1.56       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5			U channel : 64 x 119.2 x 39.5
Image: Connectors	SIZE (WALAN)		Cover (/A) : 64 x 119.2 x 43
Size (WxLxH)     Inches     Open frame: 2 x 4 x 1.56       U channel : 2.52 x 4.69 x 1.56     U channel : 2.52 x 4.69 x 1.56       Cover (/A) : 2.52 x 4.69 x 1.69     Fan (/F) : 2.52 x 4.69 x 2.39       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5			Fan (/F) : 64 x 119.2 x 60.6
Size (WxLxH)     Inches     U channel : 2.52 x 4.69 x 1.56 Cover (/A) : 2.52 x 4.69 x 1.69 Fan (/F) : 2.52 x 4.69 x 2.39       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5			Open frame: 2 x 4 x 1.56
Size (VXLATI)     Incres     Cover (/A) : 2.52 x 4.69 x 1.69       Fan (/F) : 2.52 x 4.69 x 2.39     Fan (/F) : 2.52 x 4.69 x 2.39       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5		Inchas	U channel : 2.52 x 4.69 x 1.56
Fan (/F): 2.52 x 4.69 x 2.39       Connectors     -     Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833       Warranty     yrs     5	JIZE (VVALAI I)	Inches	Cover (/A) : 2.52 x 4.69 x 1.69
Connectors   -   Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833     Warranty   yrs   5			Fan (/F) : 2.52 x 4.69 x 2.39
Warranty yrs 5	Connectors	-	Input: JST B2P3-VH, Output: M3 screw, Fan: Molex 22-05-7025, Signals: Molex 87833-0833
	Warranty	yrs	5

25°C, 10% Duty Cycle

80

Continuous Power Level (W)

100

120

140

Standard Model

160

**Peak Power Rating Curves** 

(no metal baseplate)

12

10

8

6

4

2 0

Examples:

0

20

40

150W continuous - 250W peak - 2 mins pulse time - 10% duty cycle 100W continuous - 250W peak - 5 mins pulse time - 10% duty cycle 25W continuous - 250W peak - 10 mins pulse time - 10% duty cycle

60

Peak Power Pulse Time (mins)

Open frame configuration, convection cooled

# **TDK·Lambda**

### Peak Power Rating Curves



### Orientation



Notes

See website for detailed specifications, test methods and installation manual. Specification parameters apply at 25°C ambient temperature unless otherwise stated.





## CUS250M Series

### Output Power vs Ambient Temperature (forced air cooled) all CUS250M voltages



### Standby and Fan Output Power vs Ambient Temperature



#### Notes

- 1: Orientation A (see Application Note), 50mm above surface.
- Standby output is loaded (see derating curves for Standby output), no load on Fan output
- 2: 50mm above surface. Limited by fan specification to 70°C maximum
- 3: Tested with U chassis with airflow direction 1 (see Application Note). Customer to ensure airflow rate and direction to keep components temperature below the limits. Standby and Fan output load according to derating curves. Measured in wind tunnel with 5mm space on side of U chassis.
- 4: Mounted on natural aluminium plate, 300x300x1mm lifted 50mm above other surfaces Orientation A (see Application Note) Standby output is loaded (see derating curves for Standby output), no load on Fan output



## CUS250M Series

### Outline Drawing CUS250M/U (U Channel) Option



### Outline Drawing CUS250M/A (U Channel with Cover) Option





### Outline Drawing CUS250M/F (U Channel with Cover & Top Mounted Fan) Option

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tlf.fr-powersolutions@tdk.com www.emea.lambda.tdk.com/fr
Italy Sales Office Tel: +39 02 61 29 38 63 tlf.it-powersolutions@tdk.com www.emea.lambda.tdk.com/it



tlf.nl-powersolutions@tdk.com www.emea.lambda.tdk.com/nl

#### TDK-Lambda Germany GmbH Tel: +49 7841 666 0

**TDK-Lambda France SAS** 

Tel: +33 1 60 12 71 65

tlg.powersolutions@tdk.com www.emea.lambda.tdk.com/de



## Austria Sales Office

Tel: +43 2256 655 84 tlg.at-powersolutions@tdk.com www.emea.lambda.tdk.com/at



#### Switzerland Sales Office Tel: +41 44 850 53 53

tlg.ch-powersolutions@tdk.com www.emea.lambda.tdk.com/ch



## **Nordic Sales Office**

Tel: +45 8853 8086 tlg.dk-powersolutions@tdk.com www.emea.lambda.tdk.com/dk

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### TDK-Lambda UK Ltd.

Tel: +44 (0) 12 71 85 66 66 tlu.powersolutions@tdk.com www.emea.lambda.tdk.com/uk



### TDK-Lambda Ltd.

Tel: +9 723 902 4333 tli.powersolutions@tdk.com www.emea.lambda.tdk.com/il-en



#### **TDK-Lambda Americas** Tel: +1 800-LAMBDA-4 or 1-800-526-2324 tla.powersolutions@tdk.com www.us.lambda.tdk.com



#### **TDK Electronics do Brasil Ltda** Tel: +55 11 3289-9599 sales.br@tdk-electronics.tdk.com www.tdk-electronics.tdk.com/en



#### **TDK-Lambda Corporation** Tel: +81-3-6778-1113 www.jp.lambda.tdk.com



TDK-Lambda (China) Electronics Co. Ltd. Tel: +86 21 6485-0777 tlc.powersolutions@tdk.com www.lambda.tdk.com.cn



TDK-Lambda Singapore Pte Ltd. Tel: +65 6251 7211 tls.marketing@tdk.com www.sg.lambda.tdk.com



## TDK India Private Limited, Power Supply Division Tel: +91 80 4039-0660

For Additional Information, please visit https://product.tdk.com/en/power/

mathew.philip@tdk.com www.sg.lambda.tdk.com



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