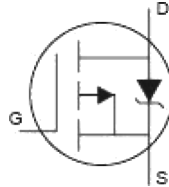


P Channel Enhancement MOSFET **multicomp** PRO

**RoHS
Compliant**



Features

- Ultra low on-resistance.
- P-Channel MOSFET.
- Fast switching.

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DS}	-12	V
Gate-Source Voltage	V _{GS}	±8	
Continuous Drain Current V _{GS} =4.5V @ TA=25°C	I _D	-4.3	A
Continuous Drain Current V _{GS} =4.5V @ TA=70°C		-3.4	
Pulsed Drain Current a		I _{DM}	
Power Dissipation @ TA=25°C	P _D	1.3	W
Power Dissipation @ TA=70°C		0.8	
Single Pulse Avalanche Energy b	E _{AS}	33	mJ
Thermal Resistance.Junction- to-Ambient	R _{thJA}	100	°C/W
Linear Derating Factor		0.01	W/°C
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	

Note.

- a. Repetitive Rating : Pulse width limited by maximum junction temperature
 b. Starting T_J=25°C, L=3.5mH, R_G=25Ω, I_{SS}=-4.3A

Electrical Characteristics Ta = 25°C

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250μA, V _{GS} =0V	-12			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0V			-1	μA
		V _{DS} =9.6V, V _{GS} =0V, T _J =55°C			-25	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	-0.4	-0.55	-0.95	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-4.5V, I _D =-4.3A			50	mΩ
		V _{GS} =-2.5V, I _D =-2.5A			85	
		V _{GS} =-1.85V, I _D =-2A			125	

Newark.com/multicomp-pro
 Farnell.com/multicomp-pro
 sg.element14.com/b/multicomp-pro

multicomp PRO

P Channel Enhancement MOSFET **multicomp** PRO

Characteristic	Symbol	Conditions	Min	Typ	Max	Unit
Forward Transconductance	g_{FS}	$V_{DS}=-10V, I_D=-4.3A$	8.6			S
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=-10V, f=1MHz$		830		pF
Output Capacitance	C_{oss}			180		
Reverse Transfer Capacitance	C_{rss}			125		
Total Gate Charge	Q_g	$V_{GS}=-5V, V_{DS}=-10V, I_D=-4.3A$		10	15	nC
Gate Source Charge	Q_{gs}			1.4	2.1	
Gate Drain Charge	Q_{gd}			2.6	3.9	
Turn-On Delay Time	$t_{d(on)}$	$I_D=-1A, V_{DS}=-6V, R_L=6\Omega, R_{GEN}=89\Omega$		11		nS
Turn-On Rise Time	t_r			32		
Turn-Off Delay Time	$t_{d(off)}$			250		
Turn-Off Fall Time	t_f			210		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=-1.3A, di/dt=100A/\mu s$		22	33	nS
Body Diode Reverse Recovery Charge	Q_{rr}			8	12	
Maximum Body-Diode Continuous Current	I_S				1.3	A
Diode Forward Voltage	V_{SD}	$I_S=-1.3A, V_{GS}=0V$			-1.2	V

Typical Characteristics

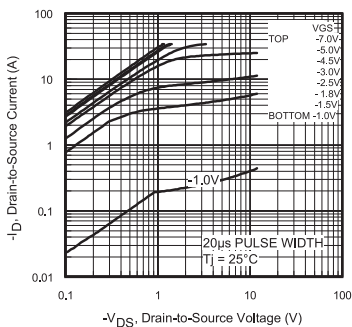


Fig 1. Typical Output Characteristics

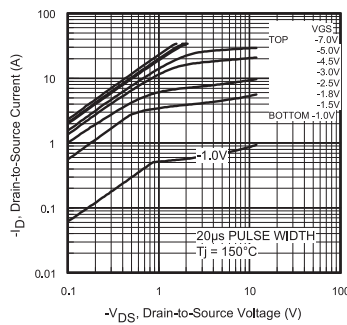


Fig 2. Typical Output Characteristics

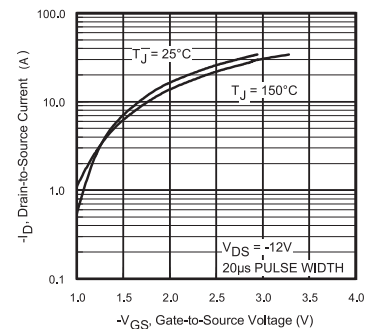


Fig 3. Typical Transfer Characteristics

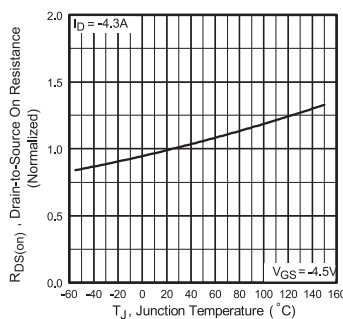


Fig 4. Normalized On-Resistance Vs. Temperature

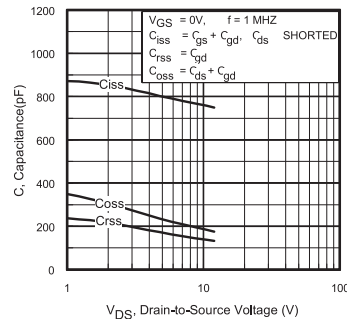


Fig 5. Typical Capacitance Vs. Drain-to-Source Voltage

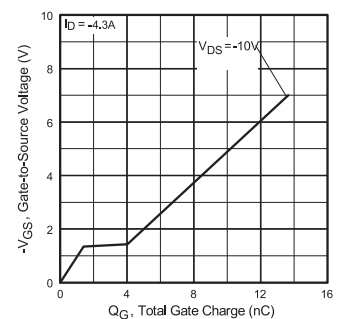


Fig 6. Typical Gate Charge Vs. Gate-to-Source Voltage

Newark.com/multicomp-pro
 Farnell.com/multicomp-pro
 sg.element14.com/b/multicomp-pro

multicomp PRO

Typical Characteristics

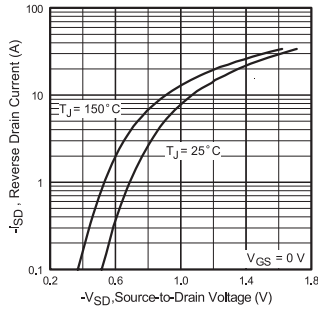


Fig 7. Typical Source-Drain Diode Forward Voltage

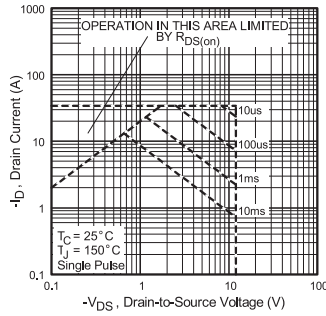


Fig 8. Maximum Safe Operating Area

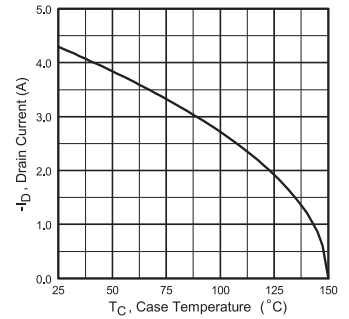


Fig 9. Maximum Drain Current Vs. Case Temperature

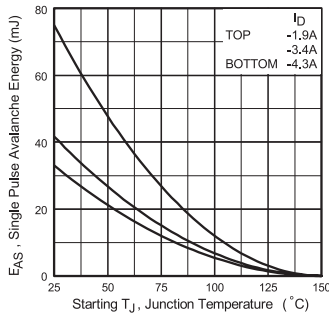


Fig 10. Maximum Avalanche Energy Vs. Drain Current

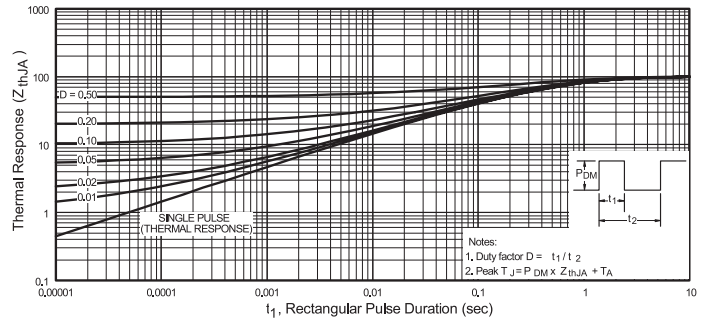


Fig 11. Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

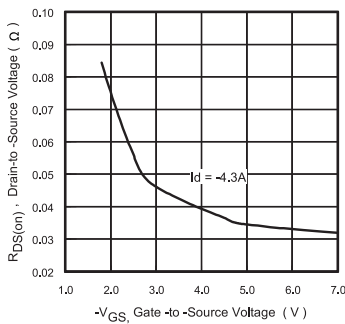


Fig 12. Typical On-Resistance Vs. Gate Voltage

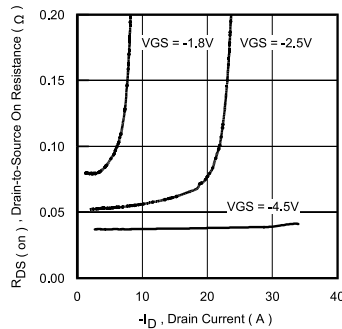


Fig 13. Typical On-Resistance Vs. Drain Current

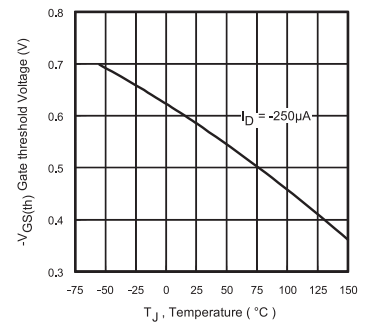
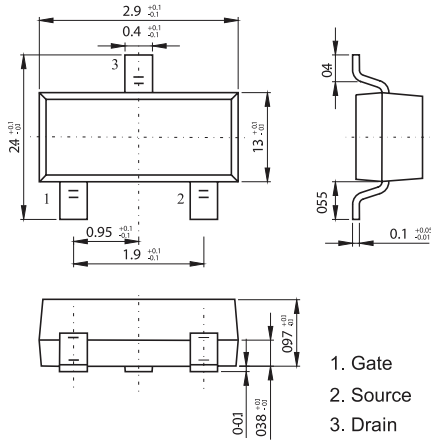


Fig 14. Typical Threshold Voltage Vs. Junction Temperature

P Channel Enhancement MOSFET **multicomp**PRO

Diagram



Part Number Table

Description	Part Number
MOSFET, P Channel, -4.3A, -12V, SOT 23	IRLML6401

Dimensions : Millimetres

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

multicompPRO