

Single Bipolar Transistor multicomp^{PRO}

RoHS
Compliant



Feature

- Epitaxial planar Die construction.

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	-60	V
Collector-Emitter Voltage	V_{CEO}		
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	600	mA
Power Dissipation	P_D	250	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to +150	

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Max	Unit	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100 \mu\text{A}, I_E = 0$	-60		V	
Collector-Emitter Breakdown Voltage *	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, I_B = 0$				
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100 \mu\text{A}, I_C = 0$		-5		
Collector cutoff current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$		-20	nA	
Collector cutoff current	I_{CEX}	$V_{CE} = -30\text{V}, V_{EB(off)} = -0.5\text{V}$		-50		
DC current gain	h_{FE}	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	75			
		$V_{CE} = -10\text{V}, I_C = -1\text{mA}$				
		$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	100			
		$V_{CE} = -10\text{V}, I_C = -150\text{mA}$		300		
		$V_{CE} = -10\text{V}, I_C = -500\text{mA}$	50			
Collector-Emitter Saturation Voltage *	$V_{CE(sat)}$	$I_C = 150 \text{ mA}, I_B = 15\text{mA}$		-0.4	V	
		$I_C = 500 \text{ mA}, I_B = 50\text{mA}$		-1.6		
Base-Emitter Saturation Voltage *	$V_{BE(sat)}$	$I_C = 150 \text{ mA}; I_B = -15 \text{ mA}$		-1.3		
		$I_C = 500 \text{ mA}; I_B = -50 \text{ mA}$		-2.6		
Current Gain - Bandwidth Product	f_T	$V_{CE} = -20\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	200		MHz	
Delay time	t_d	$V_{CC} = -30\text{V}, I_C = -150 \text{ mA}, I_{B1} = -15 \text{ mA}$		10	ns	
Rise time	t_r			40		
Storage time	t_s			80		
Fall time	t_f		$V_{CC} = -6\text{V}, I_C = -150 \text{ mA}, I_{B1} = I_{B2} = -15\text{mA}$			30

* pulse test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

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Typical Characteristics

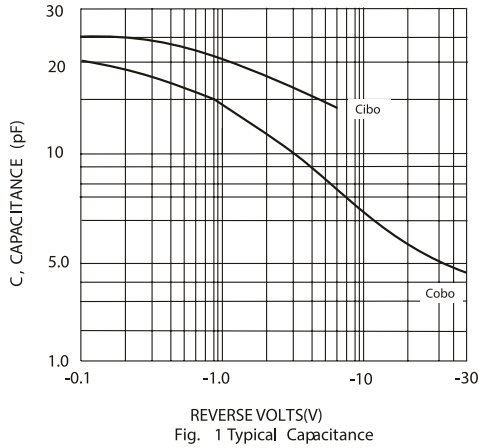


Fig. 1 Typical Capacitance

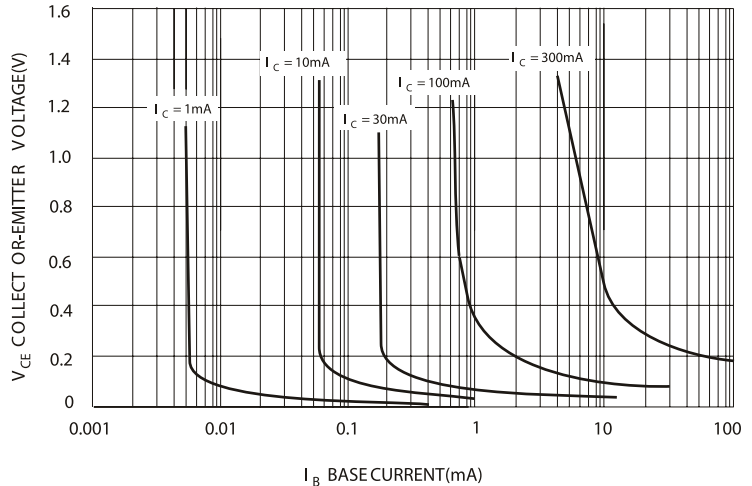
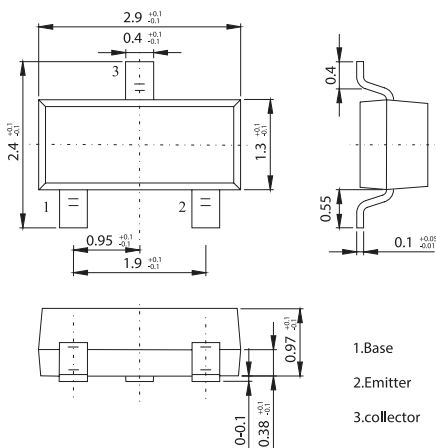


Fig. 2 Typical Collector Saturation Region

Diagram



- 1.Base
- 2.Emitter
- 3.collector

Marking: W2F

Part Number Table

Description	Part Number
Single Bipolar Transistor, PNP, 0.6A, -60V, SOT 23	MMBT2907A

Dimensions : Millimetres

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