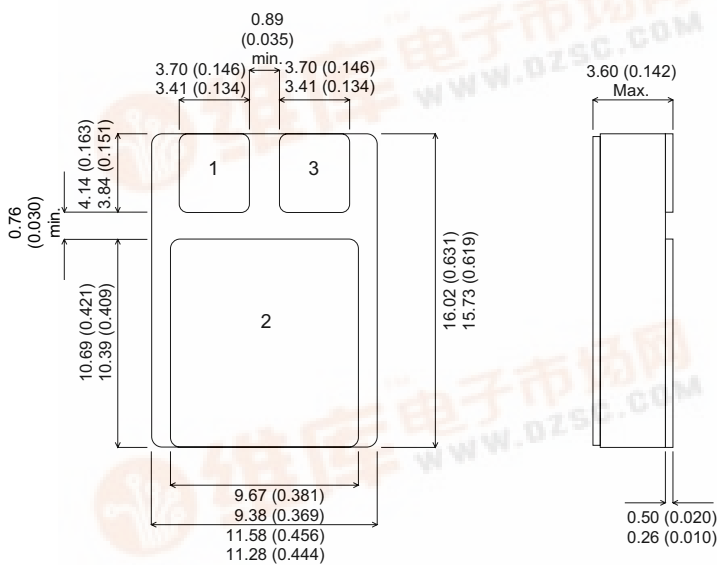


BUL58BSMD

MECHANICAL DATA

Dimensions in mm



SMD1 PACKAGE

Pad 1 – Base Pad 2 – Collector Pad 3 – Emitter

ADVANCED DISTRIBUTED BASE DESIGN HIGH VOLTAGE HIGH SPEED NPN SILICON POWER TRANSISTOR

- SEMEFAB DESIGNED AND DIFFUSED
- HIGH VOLTAGE
- FAST SWITCHING
- HIGH ENERGY RATING

FEATURES

- Multi-base for efficient energy distribution across the chip resulting in significantly improved switching and energy ratings across full temperature range.
- Ion implant and high accuracy masking for tight control of characteristics from batch to batch.
- Triple Guard Rings for improved control of high voltages.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	180V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	90V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	10V
I_C	Collector Current	7A
$I_{C(PK)}$	Peak Collector Current	10A
I_B	Base Current	2A
P_{tot}	Total Dissipation at $T_{case} = 25^{\circ}C$	50W
	Derate above $25^{\circ}C$ when used on efficient heatsink	0.28W/ $^{\circ}C$
	Operating and Storage Temperature Range	-65 to $200^{\circ}C$

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
ELECTRICAL CHARACTERISTICS					
V _{CEO(sus)}	Collector – Emitter Sustaining Voltage	I _C = 10mA	90		
V _{(BR)CBO}	Collector – Base Breakdown Voltage	I _C = 1mA	180		V
V _{(BR)EBO}	Emitter – Base Breakdown Voltage	I _E = 1mA	10		
I _{CBO}	Collector Cut-Off Current	V _{CB} = 180V T _C = 125°C		10 100	μA
I _{CEO}	Collector Cut-Off Current	I _B = 0 V _{CE} = 80V		100	μA
I _{EBO}	Emitter Cut-Off Current	I _C = 0 V _{EB} = 9V T _C = 125°C		10 100	μA
h _{FE} *	DC Current Gain	I _C = 0.3A V _{CE} = 4V I _C = 3A V _{CE} = 4V I _C = 5A V _{CE} = 4V T _C = 125°C	30 25 20	80 60 50	—
V _{CE(sat)} *	Collector – Emitter Saturation Voltage	I _C = 1A I _B = 0.1A I _C = 3A I _B = 0.3A I _C = 6A I _B = 0.6A		0.2 0.6 1.5	V
V _{BE(sat)} *	Base – Emitter Saturation Voltage	I _C = 3A I _B = 0.3A I _C = 6A I _B = 0.5A		1.1 2.0	V
DYNAMIC CHARACTERISTICS					
f _t	Transition Frequency	I _C = 0.2A V _{CE} = 4V		20	MHz
C _{ob}	Output Capacitance	V _{CB} = 20V f = 1MHz		44	pF

* Pulse test t_p = 300μs , δ < 2%