

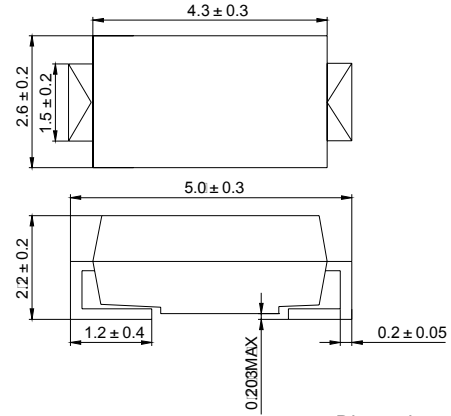
SILICON BIDIRECTIONAL DIAC

VOLTAGE RANGE: 28-36 V

FEATURES

- ◇ The three layer, two terminal, axial lead, hermetically sealed diacs are designed specifically for triggering thyristors. They demonstrate low breakover current at breakover voltage as they withstand peak pulse current. The breakover symmetry is within three volts. These diacs are intended for use in thyristors phase control, circuits for lamp dimming, universal motor speed control, and heat control.

SMAJ



ABSOLUTE RATINGS

Parameters	Symbols	DB3MJ	UNITS
Marking code		DB3	
Power dissipation on printed $T_A=50^\circ\text{C}$ circuit (L=10mm)	P_c	150.0	mW
Repetitive peak on-state current $t_p=20 \mu\text{S}$ $f=120\text{Hz}$	I_{TRM}	2.0	A
Operating junction temperature	T_J	-40--- +125	$^\circ\text{C}$
Storage temperature	T_{STG}	-40--- +125	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

Parameters		Test Conditions	DB3MJ	UNITS	
Breakover voltage (NOTE 1)	V_{BO}	C=22nf(NOTE 2) See FIG.1	Min	28	V
			Typ	32	
			Max	36	
Breakover voltage symmetry	$ +V_{BO} $ - $ -V_{BO} $	C=22nf(NOTE 2) See FIG.1	Max	± 3.0	V
Dynamic breakover voltage (NOTE 1)	$I_{\pm \Delta V}$	$\Delta I=(I_{BO} \text{ to } I_F=10\text{mA})$ See FIG.1	Min	5.0	V
Output voltage (NOTE 1)	V_o	See FIG.2	Min	5.0	V
Breakover current (NOTE 1)	I_{BO}	C=22nf(NOTE 2)	Max	100.0	μA
Rise time (NOTE 1)	t_r	See FIG.3	Typ	1.5	μS
Leakage current (NOTE 1)	I_R	$V_R=0.5 V_{BO}$ See FIG.1	Max	10.0	μA

NOTE: 1. Electrical characteristics applicable in both forward and reverse directions.

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2. Connected in parallel with the devices

FIG.1--VOLTAGE-CURRENT CHARACTERISTIC CURVE

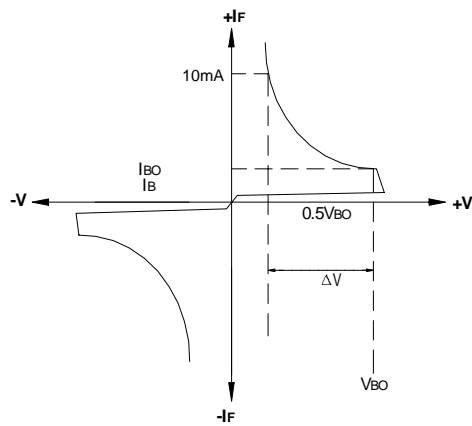


FIG.2--TEST CIRCUIT FOR OUTPUT VOLTAGE

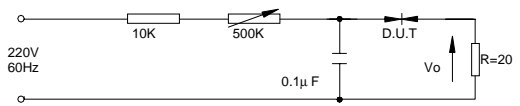


FIG.3-- TEST CIRCUIT SEE FIG.2 ADJUST R FOR $I_P=0.5A$

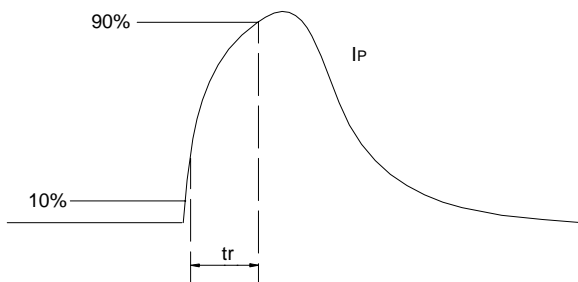


FIG.5--RELATIVE VARIATION OF V_{BO} VERSUS JUNCTION TEMPERATURE(TYPICAL VALUES)

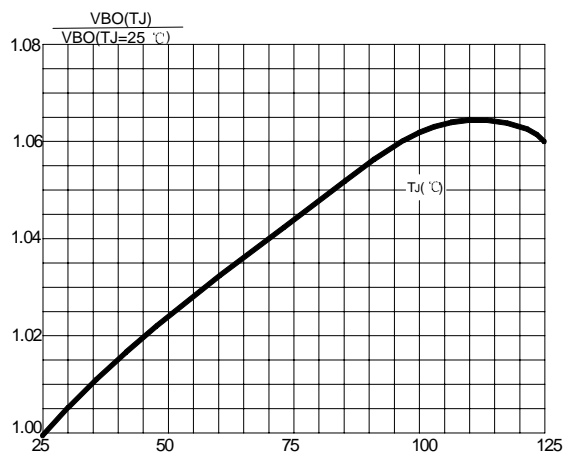


FIG.4--POWER DISSIPATION VERSUS AMBIENT TEMPERATURE (MAXIMUM VALUES)

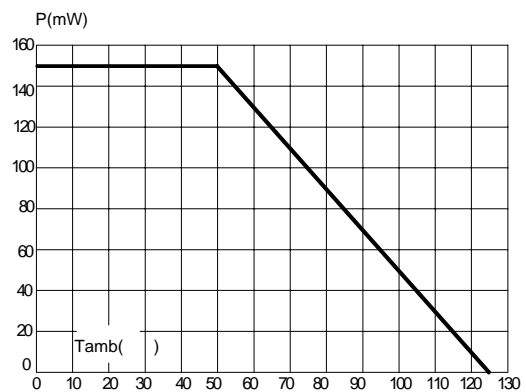


FIG.6--PEAK PULSEE CURRENT VERENT VERSUS PULSE DURATION(MAXIMUM VALUES)

