



SEMICONDUCTOR

# MCLDB3/MCLDC34/MCLDB4/MCLDB6

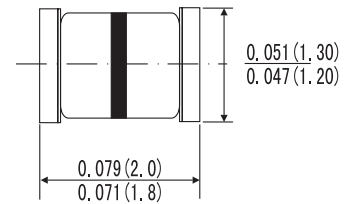
## SILICON BIDIRECTIONAL DIAC

DIAC

### 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(DB3,DC34,DB4) or four volts(DB6). These diacs are intended for use in thyristors phase control, circuits for lamp dimming, universal motor speed control, and heat control.
- JF's DB3/DC34/DB4/DB6 are bi-directional triggered diode designed to operate in conjunction with Triacs and SCR's

### Micro-MELF



Dimensions in inches and (millimeters)

### MECHANICAL DATA

- Case: Micro-MELF glass case
- Weight: Approx. 0.03 gram

### ABSOLUTE RATINGS(LIMITING VALUES)

Symbols	Parameters		Value				Units
			MCLDB3	MCLDC34	MCLDB4	MCLDB6	
PC	Power Dissipation on Printed Circuit(L=10mm)	T <sub>A</sub> =50°C	150				mW
I <sub>TRM</sub>	Repetitive Peak on-state Current	t <sub>p</sub> =10μs F=100Hz	2.0	2.0	2.0	16	A
T <sub>STG</sub> /T <sub>J</sub>	Storage and Operating Junction Temperature		-40 to +125/-40 to 110				°C

### ELECTRICAL CHARACTERISTICS

Symbols	Parameters	Test Condition	Value				Units	
			MCLDB3	MCLDC34	MCLDB4	MCLDB6		
V <sub>BO</sub>	Breakover Voltage (Note 2)	C=22nF(Note 2) See diagram 1	Min Typ Max	28 32 36	30 34 38	35 40 45	56 60 70	V
$\frac{ +V_{BO} }{ -V_{BO} }$	Breakover Voltage Symmetry	C=22nF(Note 2) See diagram 1	Max	±3		±4		V
$ \pm \Delta V $	Dynamic Breakover Voltage (Note1)	$\Delta I = (I_{BO} \text{ to } I_F = 10mA)$ See Diagram 1	Min	5		10		V
V <sub>O</sub>	Output Voltage (Note 1)	See Diagram 2	Min	5				V
I <sub>BO</sub>	Breakover Current (Note1)	C=22nF(Note 2)	Max	100				μA
t <sub>r</sub>	Rise Time (Note1)	See Diagram 3	Typ	1.5				μs
I <sub>B</sub>	Leakage Current (Note1)	V <sub>B</sub> =0.5 V <sub>BO</sub> max see diagram 1	Max	10				μA

- Notes: 1. Electrical characteristics applicable in both forward and reverse directions.  
2. Connected in parallel with the devices.

# RATINGS AND CHARACTERISTIC CURVES MCLDB3/MCLDC34/MCLDB4/MCLDB6

DIAGRAM 1: Current-voltage characteristics

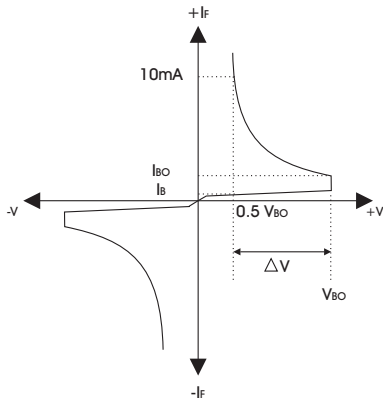


FIG.1-Power dissipation versus ambient temperature (maximum values)

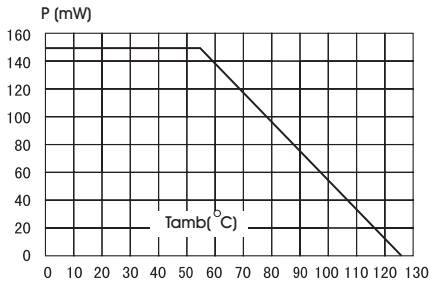


FIG.3-Peak pulse current versus pulse duration (maximum values)

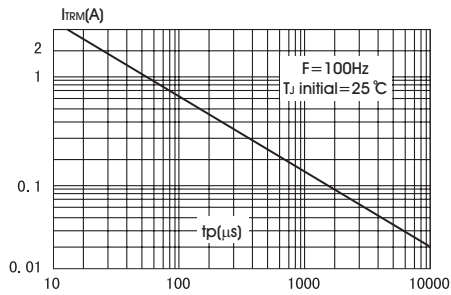


DIAGRAM 2: Test circuit for output voltage

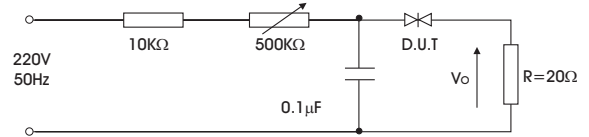


DIAGRAM 3: Test circuit see diagram2 adjust R for Ip=0.5A

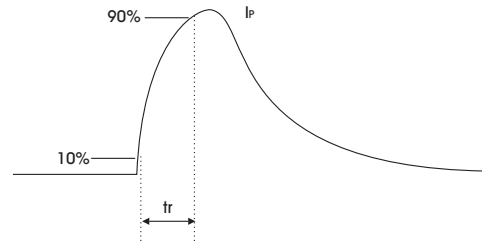


FIG.2-Relative variation of VBO versus junction temperature (typical values)

