



Pb Free Plating Product

D39-02D thru D39-12D

20.0 Ampere Heatsink Dual Doubler Polarity Ultra Fast Recovery Rectifiers

<p><b>Features</b></p> <ul style="list-style-type: none"> <li>※ ThinkSemi latest&amp;matured process FRD/FRED</li> <li>※ Low forward voltage drop</li> <li>※ High current capability</li> <li>※ Low reverse leakage current</li> <li>※ High surge current capability</li> </ul> <p><b>Application</b></p> <ul style="list-style-type: none"> <li>※ Automotive Inverters and Solar Inverters</li> <li>※ Car Audio Amplifiers and Sound Device Systems</li> <li>※ Plating Power Supply, Motor Control, UPS and SMPS etc.</li> </ul> <p><b>Mechanical Data</b></p> <ul style="list-style-type: none"> <li>※ Case: Heatsink open metal TO-3P(TO-3PN/TO-3PB) package</li> <li>※ Epoxy: UL 94V-0 rate flame retardant</li> <li>※ Terminals: Solderable per MIL-STD-202 method 208</li> <li>※ Polarity: As marked on diode body</li> <li>※ Mounting position: Any</li> <li>※ Weight: 6.5 gram approximately</li> </ul>	<p>TO-3P(TO-3PN/TO-3PB) Unit:inch(mm)</p> <p>Positive Common Cathode Suffix "C"</p> <p>Negative Common Anode Suffix "N"</p> <p>Doubler Tandem Polarity Suffix "D"</p> <p>Series Tandem Polarity Suffix "S"</p>
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**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25°C ambient temperature unless otherwise specified.  
 Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	D39-02D	D39-04D	D39-06D	D39-08D	D39-10D	D39-12D	UNIT
Maximum Recurrent Peak Reverse Voltage	VRRM	200	400	600	800	1000	1200	V
Maximum RMS Voltage	VRMS	140	280	420	560	700	840	V
Maximum DC Blocking Voltage	VDC	200	400	600	800	1000	1200	V
Maximum Average Forward Rectified Current TC=125°C (Total Device 2x10.0A=20.0A)	IF(AV)	20.0						A
Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)(Per Diode/Per Leg)	IFSM	200						A
Maximum Instantaneous Forward Voltage @10.0A(Per Diode/Per Leg)	VF (Typical)	0.85-0.95	1.00-1.25	1.25-1.50	1.50-1.70			V
Maximum DC Reverse Current @TJ=25°C At Rated DC Blocking Voltage @TJ=125°C	IR	1.0 100						µA µA
Maximum Reverse Recovery Time (Note1)	Trr	25-50			50-75			nS
Typical Junction Capacitance (Note 2)	CJ	100						pF
Typical Thermal Resistance (Note 3)	RθJC	0.75						°C/W
Operating Junction and Storage Temperature Range	TJ,TSTG	-55 to +175						°C

Note:(1)Reverse recovery test conditions IF = 0.5A, IR = 1.0A, Irr = 0.25A.  
 Note:(2)Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.  
 Note:(3)Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

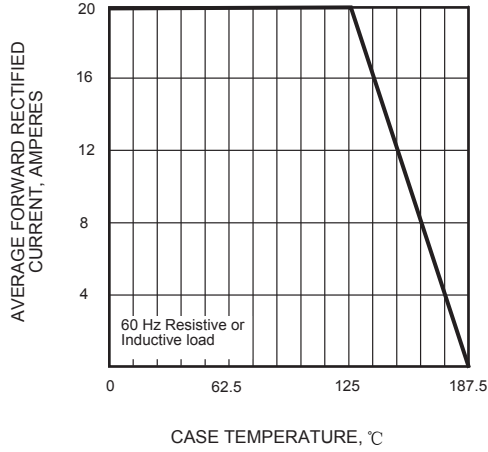


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

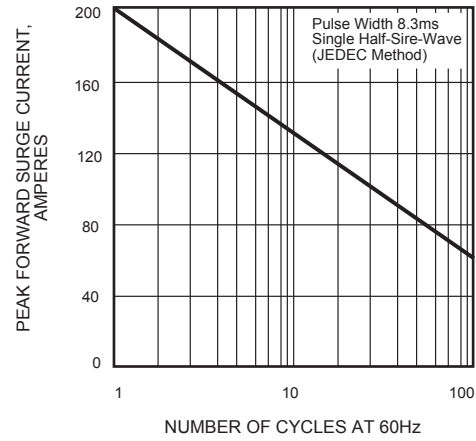


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

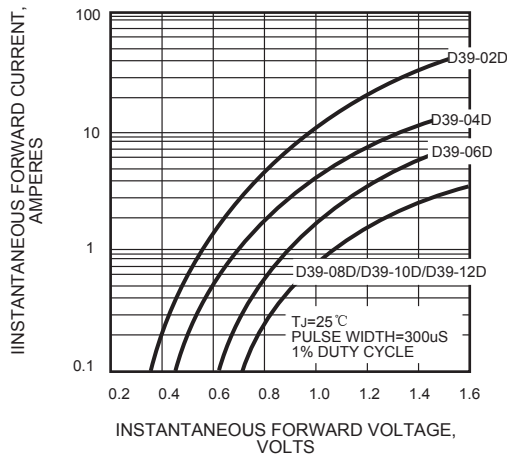


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

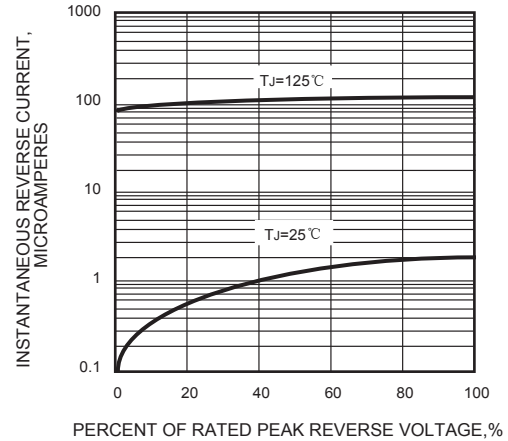


FIG.5 - TYPICAL JUNCTION CAPACITANCE

