



SEMICONDUCTOR

# DATA SHEET

## MUR120 ~ MUR160

designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

### FEATURES

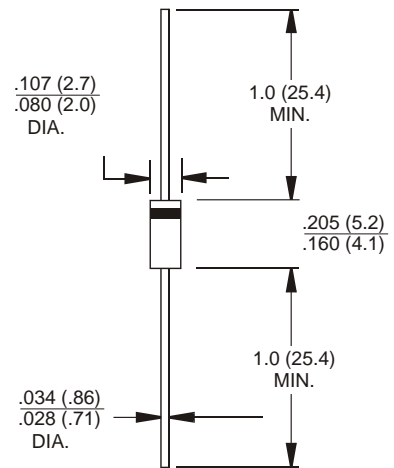
- Ultrafast 50 and 75 Nano second Recovery Times
- 175°C Operating Junction Temperature
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- Reverse Voltage to 600 Volts
- High temperature soldering : 260 °C / 10 seconds at terminals
- Pb free product at available : 9 9% Sn above meet RoHS environment substance directive request



DO-41 Unit:inch(mm)

### Mechanical Characteristics:

- Case : Epoxy , Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16, from case
- Shipped in plastic bags, 1000 perbag
- Available Tape and Reeled , 5000 per reel , by adding a "RL" suffix to the part number
- Polarity: Cathode Indicated by Polarity Band
- Marking: MUR120, MUR140 , MUR160



### MAXIMUM RATINGS

Rating	Symbol	MUR			Unit
		120	140	160	
Peak Repetitive Reverse Voltage	VRRM				Volts
Working Peak Reverse Voltage	VRWM	200	400	600	
DC Blocking Voltage	VR				Amps
Average Rectified Forward Current (Square Wave Mounting Method #3 Per Note 1)	IF(AV)	1.0 @ TA = 130°C	1.0 @ TA = 120°C		
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	IFSM	30			Amps
Operating Junction Temperature and Storage Temperature	TJ, Tstg	-55 to +150			°C

### THERMAL CHARACTERISTICS

Maximum Thermal Resistance, Junction to Ambient	RqJA	See Note 1	°C/W
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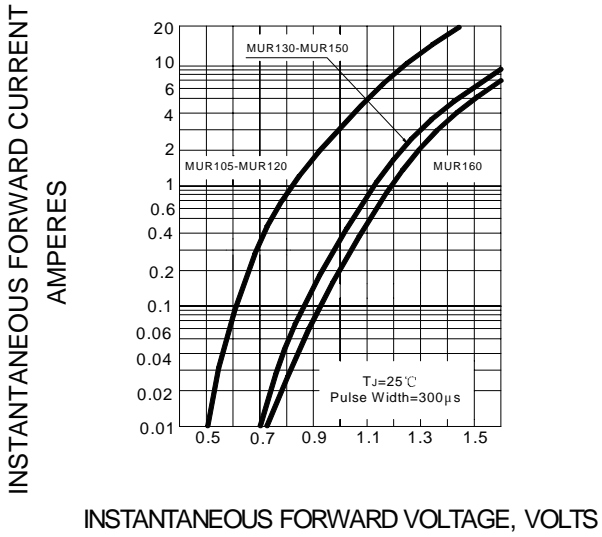
### ELECTRICAL CHARACTERISTICS

Parameter	Symbol	120	140	160	Unit
Maximum Instantaneous Forward Voltage (1) (iF = 1.0 Amp, TJ = 150°C)	vF	0.875	0.875	1.00	Volts
(iF = 1.0 Amp, TJ = 25°C)		1.00	1.00	1.30	
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, TJ = 150°C)	iR	50	150	150	uA
(Rated dc Voltage, TJ = 25°C)		5	5	5	
Maximum Reverse Recovery Time (IF = 0.5 Amp, iR = 1.0 Amp, IREC = 0.25 A)	trr	50	50	50	ns

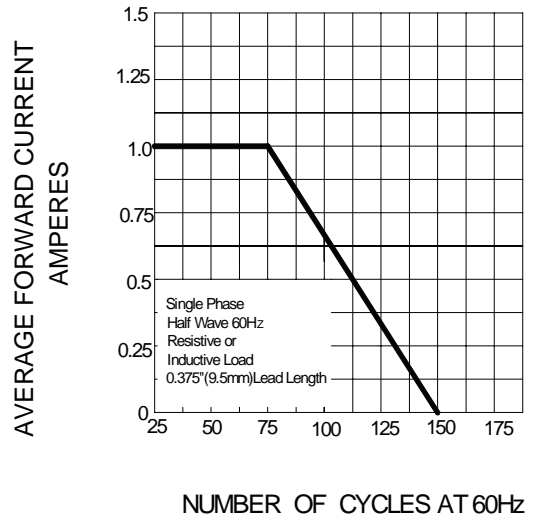
(1) Pulse Test: Pulse Width = 300 ms, Duty Cycle 3 2.0%.

# MUR120

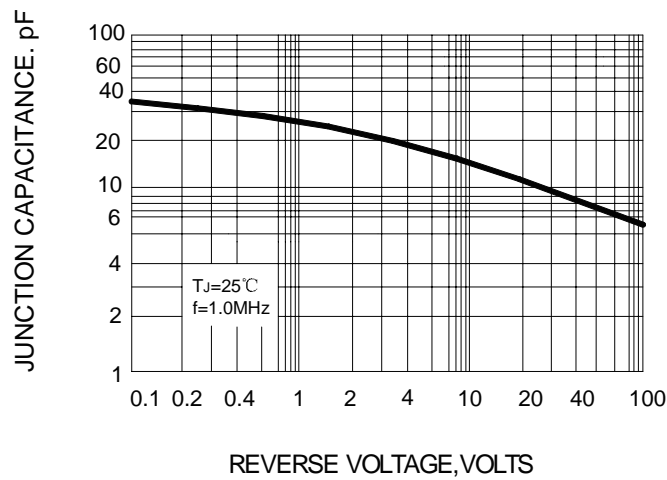
**FIG.1 – TYPICAL FORWARD CHARACTERISTICS**



**FIG.2 – FORWARD DRATING CURVE**



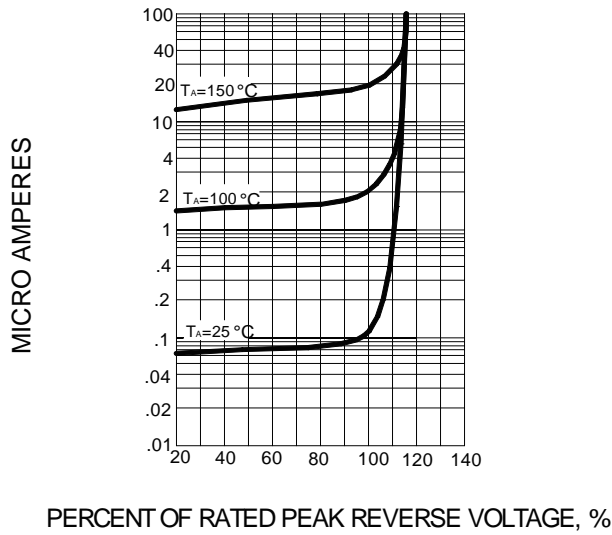
**FIG.3 – TYPICAL JUNCTION CAPACITANCE**



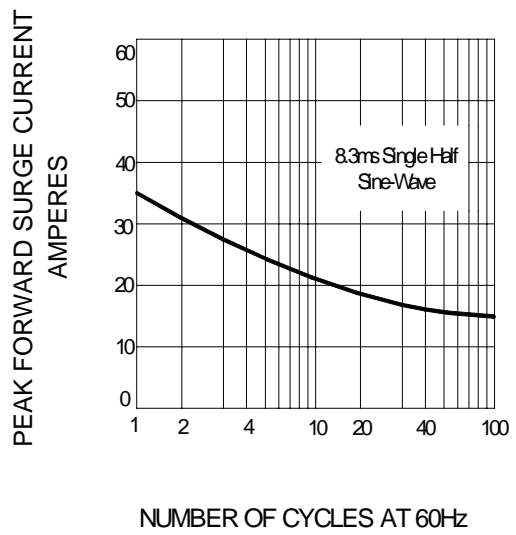
# MUR140 ,160

INSTANTANEOUS REVERSE LEAKAGE CURRENT

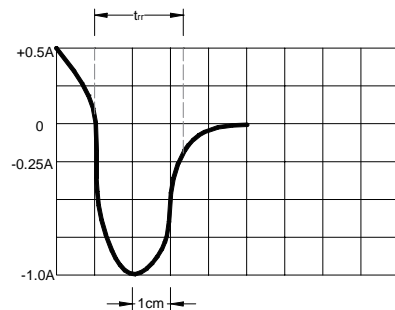
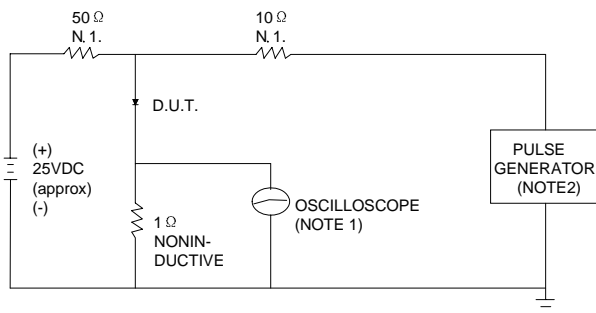
**FIG.4 – TYPICAL REVERSE CHARACTERISTICS**



**FIG.5 – PEAK FORWARD SURGE CURRENT**



**FIG.6 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**



NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE =  $1\text{M}\Omega$ , 22pF.  
 2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50Ω.

SET TIME BASE FOR 10/20 ns/cm