SURFACE MOUNT SUPER FAST RECTIFIER

MURS160

DO-214AA (SMB)

Surface Mount Plastic Package

FEATURES

1). Glass Passivated Junction Chip
2). Super Fast Switching for High Efficiency
3). Low Reverse Leakage
4). High Forward Surge Current Capability
5). The Plastic Package Carries Underwriters Laboratory Flammability Classification 94V-O.
6). Built-in-Strain Relief, Ideal for Automated Placement
7). High Temperature Soldering Guaranteed : 250°C/10 seconds at terminals
8). Terminals : Solder Plated, Solderable per MIL-STD-750, Method 2026
9). Polarity : Colour band denotes cathode end
10). Weight : 0.09 grams

MAXIMUM RATINGS

(Ratings at T_A=25°C Ambient Temperature unless otherwise specified.)
Single Phase, Half Wave, 60Hz, Resistive or Inductive Load. For Capacitive Load, Derate Current by 20%.

CHARACTERISTICS		SYMBOL	MURS160	UNIT
Maximum Recurrent Peak Reverse Voltage		V_{RRM}	600	V
Maximum RMS Voltage		V_{RMS}	420	V
Maximum DC Blocking Voltage		V_{DC}	600	V
Maximum Average Forward Rectified Current at T_L=105°C		$I_{(AV)}$	1	A
Peak Forward Surge Current 8.3ms Single Half Sine -Wave Superimposed on Rated		I_{FSM}	30	A
Mximum Instanteneous Forward Voltage at 1.0A		V_F	1.5	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	at T_A=25°C	I_{R1}	5	μA
	at T_A=100°C	I_{R2}	200	μA
Maximum Reverse Recovery Time (Note 1)		t_{rr}	50	ns
Typical Junction Capacitance (Note 2)		Cj	60	pF
Typical Thermal Resistance (Note 3)		$R_{\theta J\text{-}A}$	40	°C/W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-65 to +150	°C

Note 1. Reverse Recovery Condition I_F = 0.5A, I_R=1.0A, Irr= 0.25A.
Note 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
Note 3. P.C.B. mounted with 0.2*0.2" (5*5)mm copper pad areas.

Typical Characteristic Curves

Fig. 1. Forward Current Derating Curve

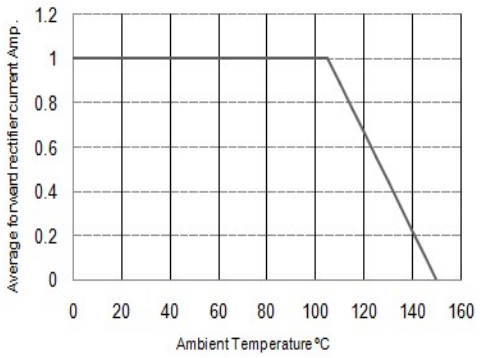
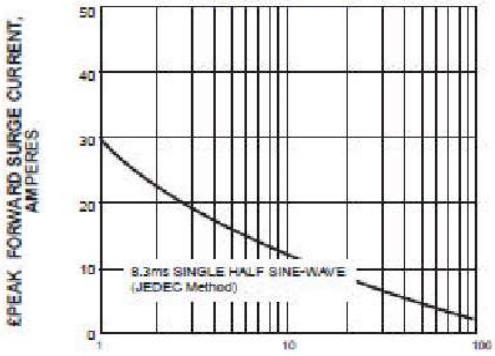
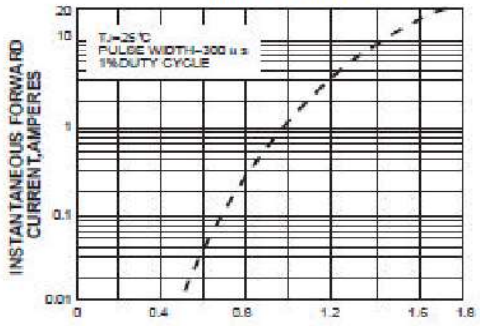


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



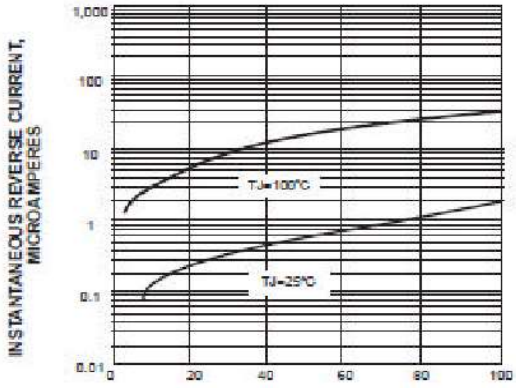
NUMBER OF CYCLES AT 60 Hz

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



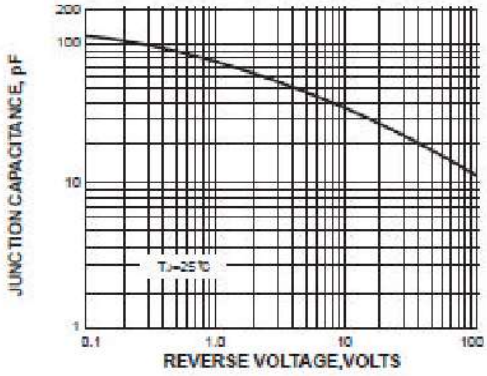
INSTANTANEOUS FORWARD VOLEAGE, VOLTS

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



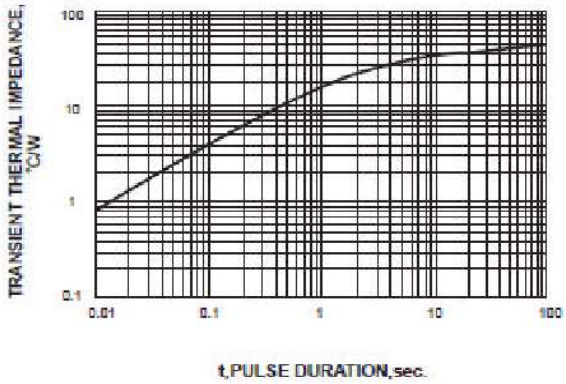
PERCENTAGE OF PEAK REVERSE VOLTAGE,%

FIG. 5-TYPICAL JUNCTION CAPACITANCE



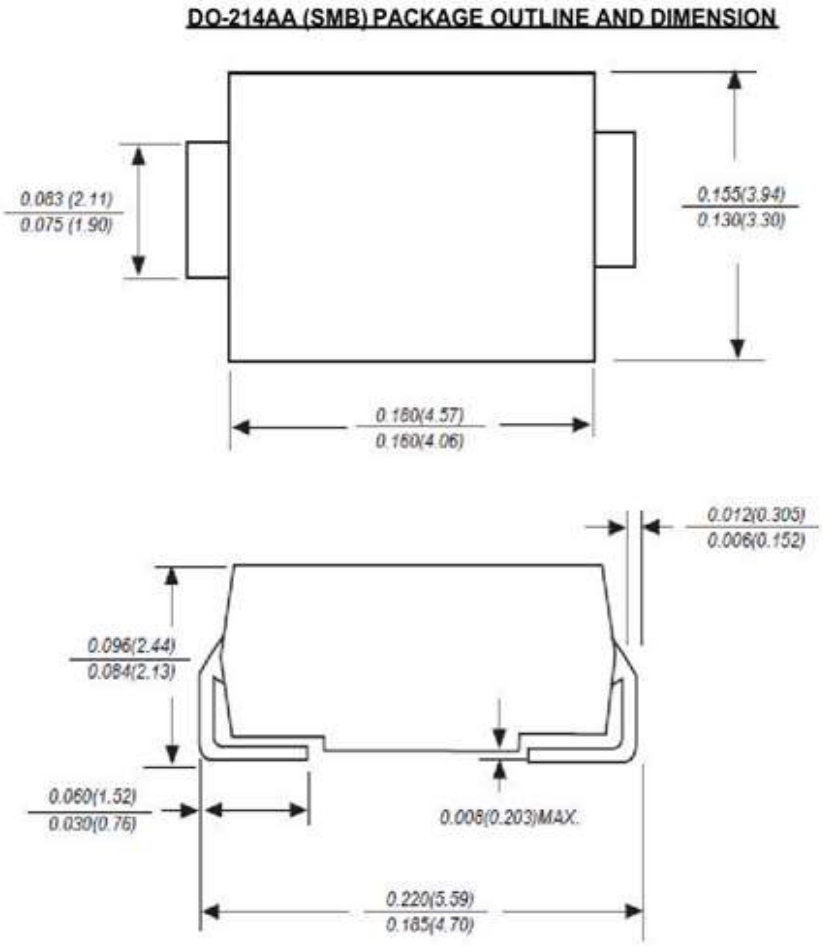
REVERSE VOLTAGE,VOLTS

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



t,PULSE DURATION,sec.

Packade Details



Dimensions in inches and (millimeters)

Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside down. They should not be placed against the wall.

Shelf Life of CDIL Products

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.
If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.
The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

Floor Life of CDIL Products and MSL Level

When the products are opened from the original packing, the floor life will start.
For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	**Time**	**Condition**
1	Unlimited	≤30 °C / 85% RH
2	1 Year	≤30 °C / 60% RH
2a	4 Weeks	≤30 °C / 60% RH
3	168 Hours	≤30 °C / 60% RH
4	72 Hours	≤30 °C / 60% RH
5	48 Hours	≤30 °C / 60% RH
5a	24 Hours	≤30 °C / 60% RH
6	Time on Label(TOL)	≤30 °C / 60% RH

Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.

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