MURS140 & MURS160

Vishay General Semiconductor

Surface Mount Ultrafast Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	400 V, 600 V
I_{FSM}	35 A
t_{rr}	50 ns
V_F	1.05 V
T_j max.	175 °C

DO-214AA (SMB)

Features

- Glass passivated chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds

Mechanical Data

Case: DO-214AA (SMB)

Epoxy meets UL 94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes cathode end

Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and Telecommunication

Maximum Ratings

T_A = 25 °C unless otherwise specified

Parameter	Symbol	MURS140	MURS160	Unit
Device Marking Codes		MG	MJ	
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	V
Working peak reverse voltage	V_{RWM}	400	600	V
Maximum DC blocking voltage	V_{DC}	400	600	V
Maximum average forward rectified current at T_L = 150 °C see figure 1 T_L = 125 °C	$I_{F(AV)}$	1.0 2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	35		A
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175		°C

Electrical Characteristics

T_A = 25 °C unless otherwise specified#

Parameter	Test condition	Symbol	MURS 140	MURS 160	Unit
Maximum instantaneous forward voltage (1)	at I_F = 1.0 A, T_J = 25 °C at I_F = 1.0 A, T_J = 150 °C	V_F	1.25 1.05		V
Maximum instantaneous reverse current at rated DC blocking voltage (1)	T_J = 25 °C T_J = 150 °C	I_R	5.0 150		µA
Maximum reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	50		ns
Maximum reverse recovery time	at I_F = 1.0 A, di/dt = 50 A/µs, V_R = 30 V, I_{rr} = 10 % I_{RM}	t_{rr}	75		ns
Maximum forward recovery time	at I_F = 1.0 A, di/dt = 100 A/µs, recovery to 1.0 V	t_{fr}	50		ns

Notes:
(1) Pulse test: t_p = 300 µs pulse, duty cycle ≤ 2 %

Thermal Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Symbol	MURS140	MURS160	Unit
Typical thermal resistance junction to ambient	$R_{\theta JL}$	13		C/W

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

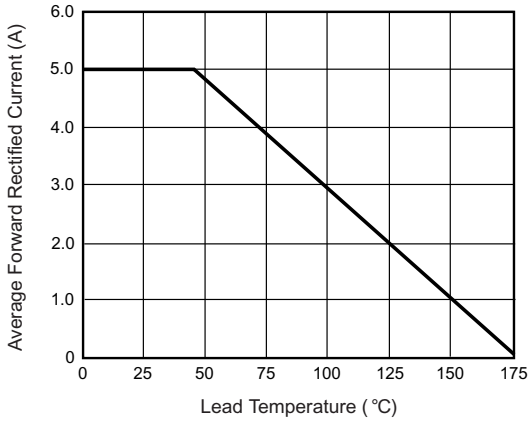


Figure 1. Forward Current Derating Curve

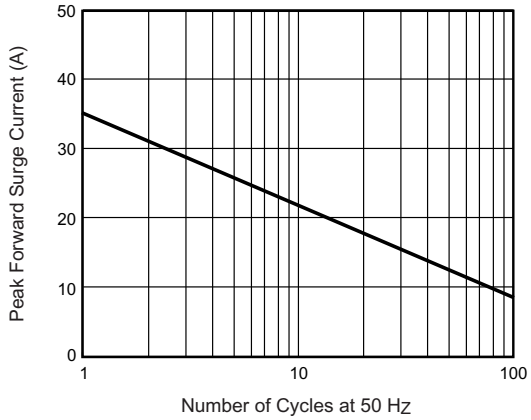


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

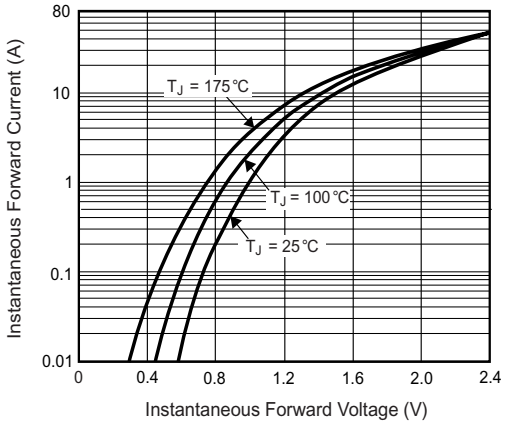


Figure 3. Typical Instantaneous Forward Characteristics

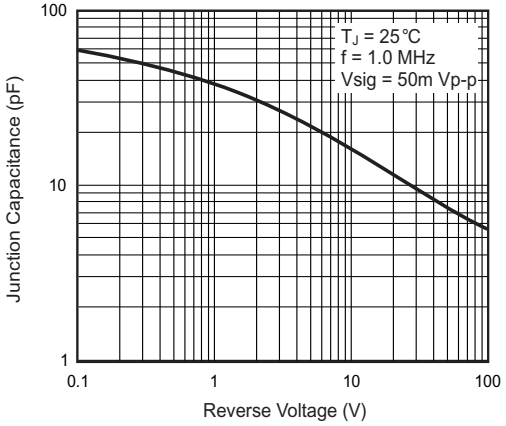


Figure 5. Typical Junction Capacitance

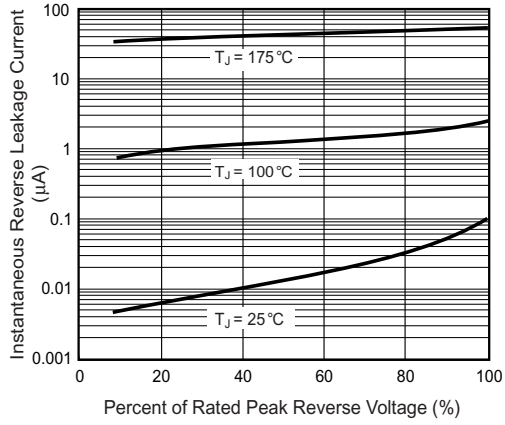
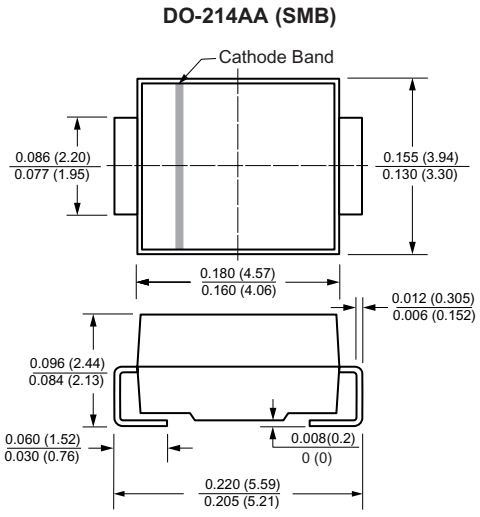
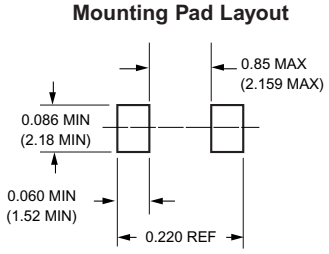


Figure 4. Typical Reverse Leakage Characteristics

Package outline dimensions in inches (millimeters)





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