Ultra-fast Plastic Rectifiers Reverse Voltage 400V to 600V Forward Current 1A

MURS140 and MURS160

Features

- Glass passivated junction
- Plastic package has UL flammability classification 94V-0
- Ultra-fast recovery time for high efficiency
- Ideally suited for use in very high frequency switching power supplies, inverters, and as a free wheeling diode
- For surface mount applications
- High temperature soldering guaranteed: 250°C/10seconds on terminals

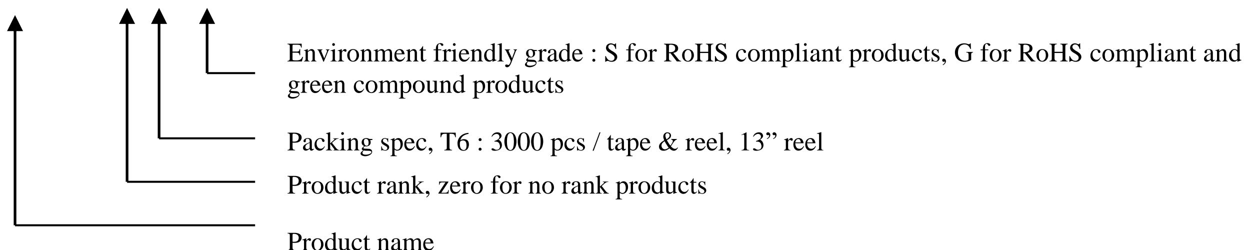
Outline

Mechanical Data

- Case : JEDEC DO-214AA(SMB) molded plastic body
- Terminals: Pure tin plated, solderable per MIL-STD-750 method 2026
- Polarity: Color band denotes cathode end.
- Weight: 0.003 oz., 0.093 gram

Ordering Information

Device	Package	Shipping
MURS140- 0-T6-G	SMB (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel
MURS160- 0-T6-G		



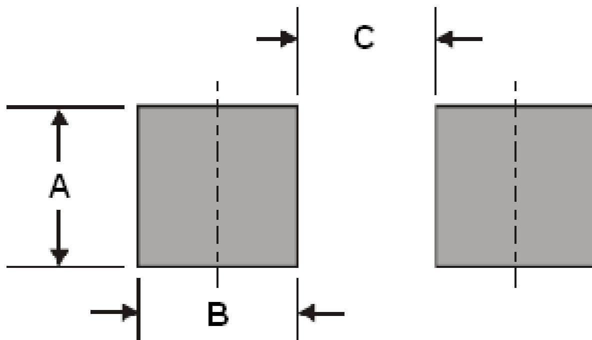
Maximum Ratings and Electrical Characteristics

(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter		Symbol	Type MURS140	Type MURS160	Units
Maximum repetitive peak reverse voltage		V_{RRM}	400	600	V
Peak reverse working voltage		V_{RWM}	400	600	V
Maximum DC blocking voltage		V_{DC}	400	600	V
Maximum instantaneous forward voltage (Note 1)	at 1A, T_J=25°C	V_F	1.25		V
	at 1A, T_J=150°C		1.05		
Maximum average forward rectified current (see Fig 1)	at T_L=150°C	$I_{F(AV)}$	1		A
	T_L=125°C		2		
Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method)		I_{FSM}	35		A
Maximum instantaneous reverse current at rated DC blocking voltage (Note 1)	T_J=25°C	I_R	5		μA
	T_J=100°C		200		
Maximum reverse recovery time at I_F=0.5A, I_R=1A, I_{rr}=0.25A		trr	50		ns
Maximum reverse recovery time at I_F=1A, dI/dt=50A/μs, V_R=30V, I_{rr}=10% I_{RM}		trr	75		ns
Maximum forward recovery time at I_F=1A, dI/dt=100A/μs, recovery to 1V		trr	50		ns
Typical thermal resistance, junction to ambient		$R_{\theta JA}$	13		℃/W
Operating junction and storage temperature range		T_J;T_{STG}	-55 ~ +175		℃

Note: 1.Pulse test: pulse width≤300μs, duty cycle≤2%

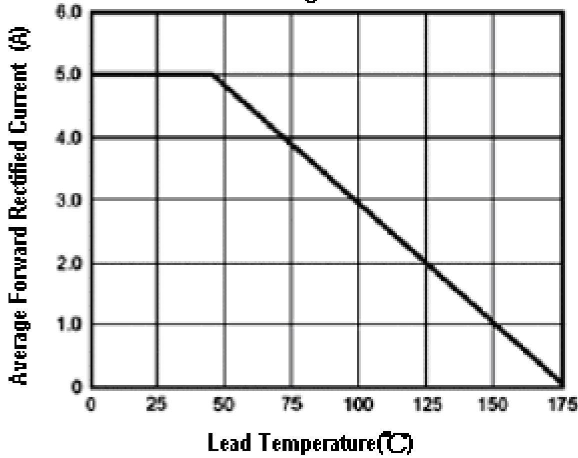
Recommended Footprint

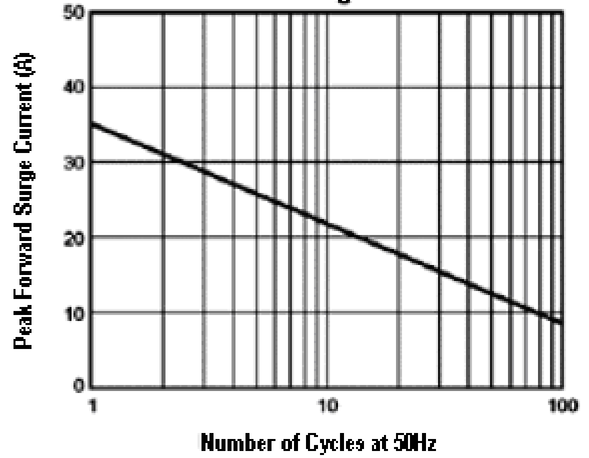


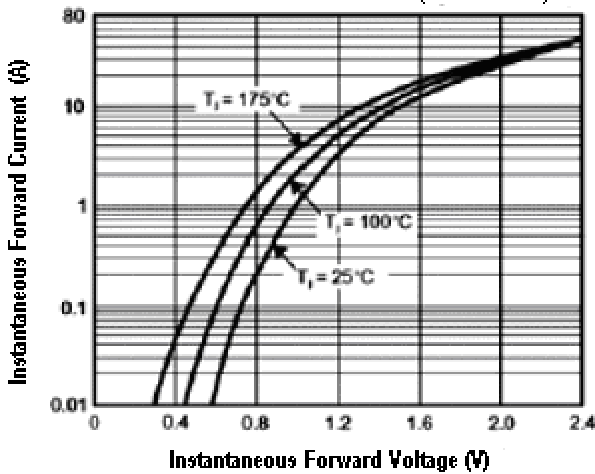
Dimensions in inches and (millimeter)

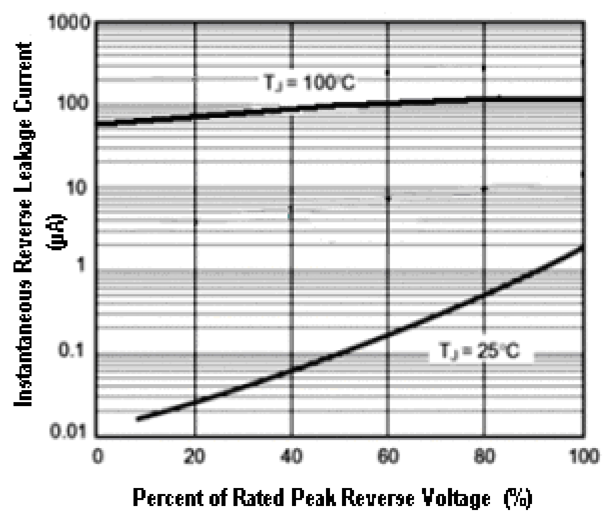
DIM	Inches Typ	Millimeters Typ
A	0.142	3.60
B	0.059	1.50
C	0.118	3.00

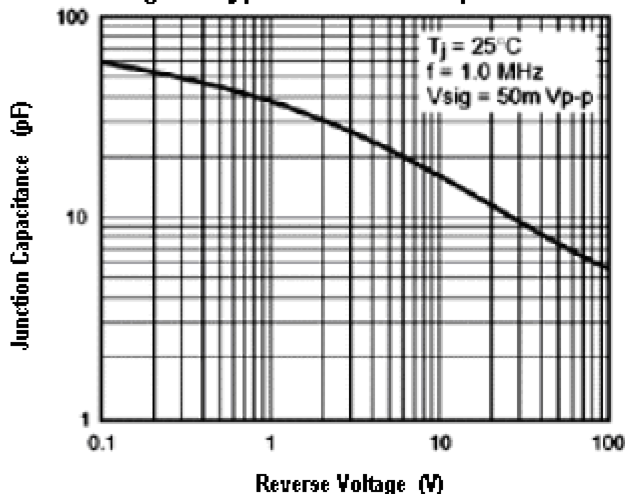
Characteristic Curves



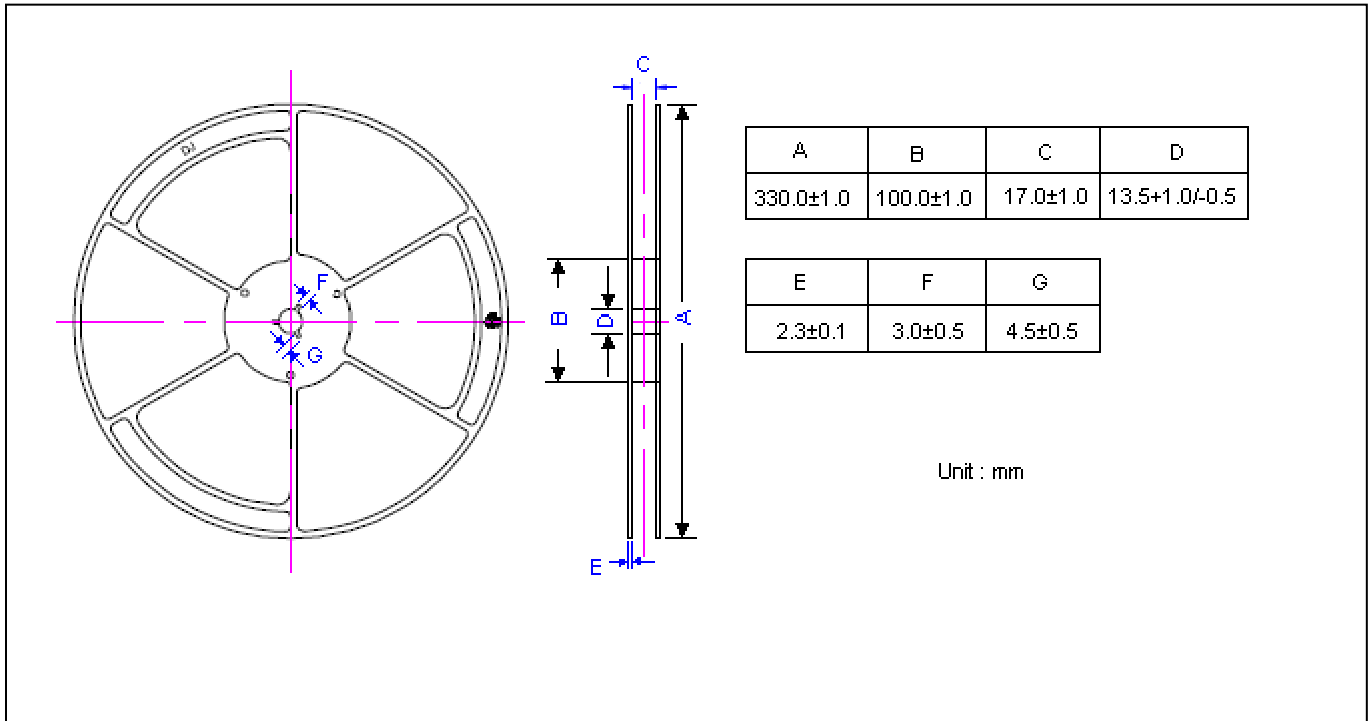








Reel Dimension

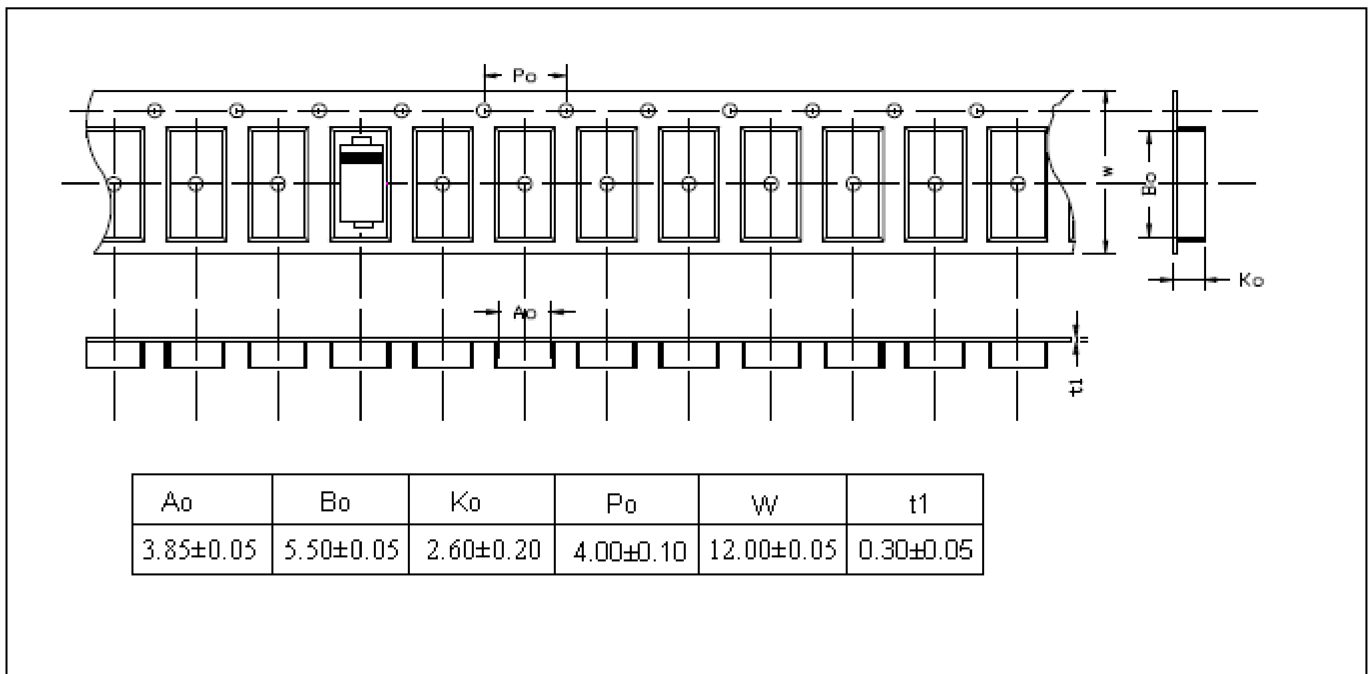


A	B	C	D
330.0±1.0	100.0±1.0	17.0±1.0	13.5+1.0/-0.5

E	F	G
2.3±0.1	3.0±0.5	4.5±0.5

Unit : mm

Carrier Tape Dimension

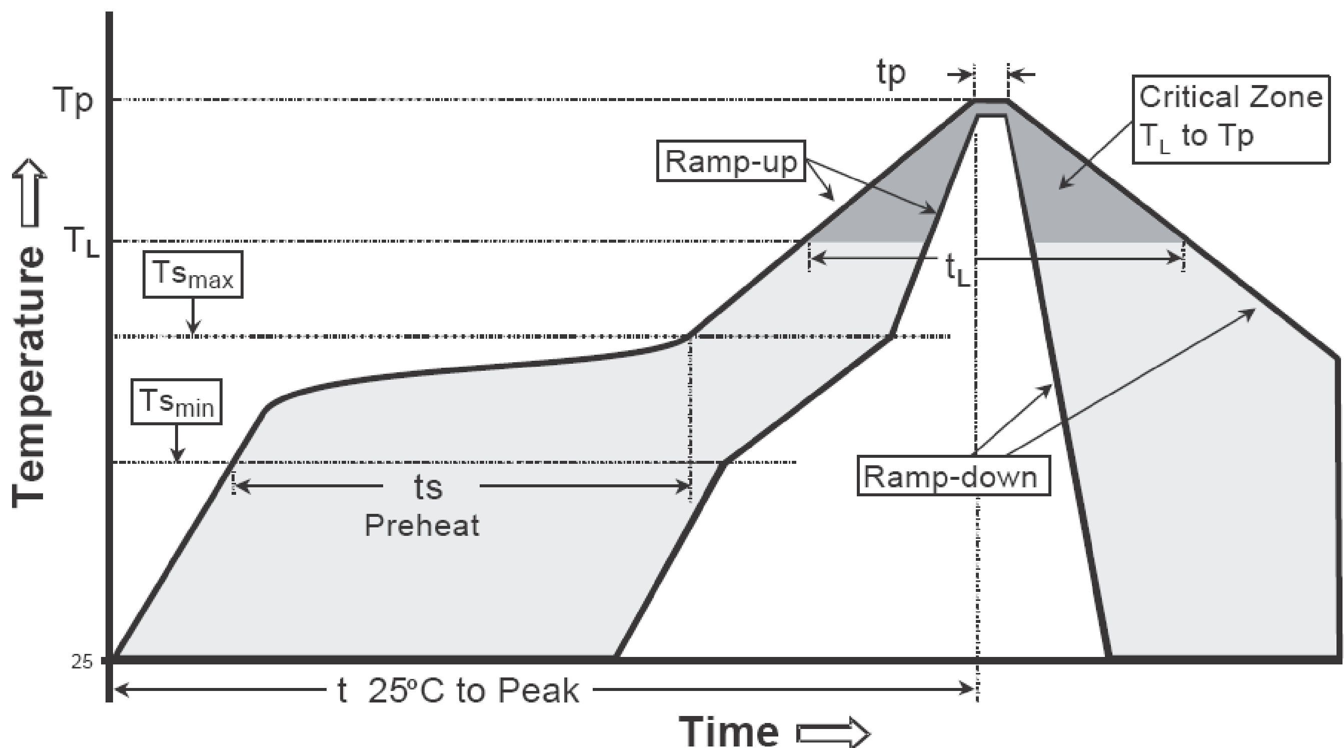


Ao	Bo	Ko	Po	W	t1
3.85±0.05	5.50±0.05	2.60±0.20	4.00±0.10	12.00±0.05	0.30±0.05

Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

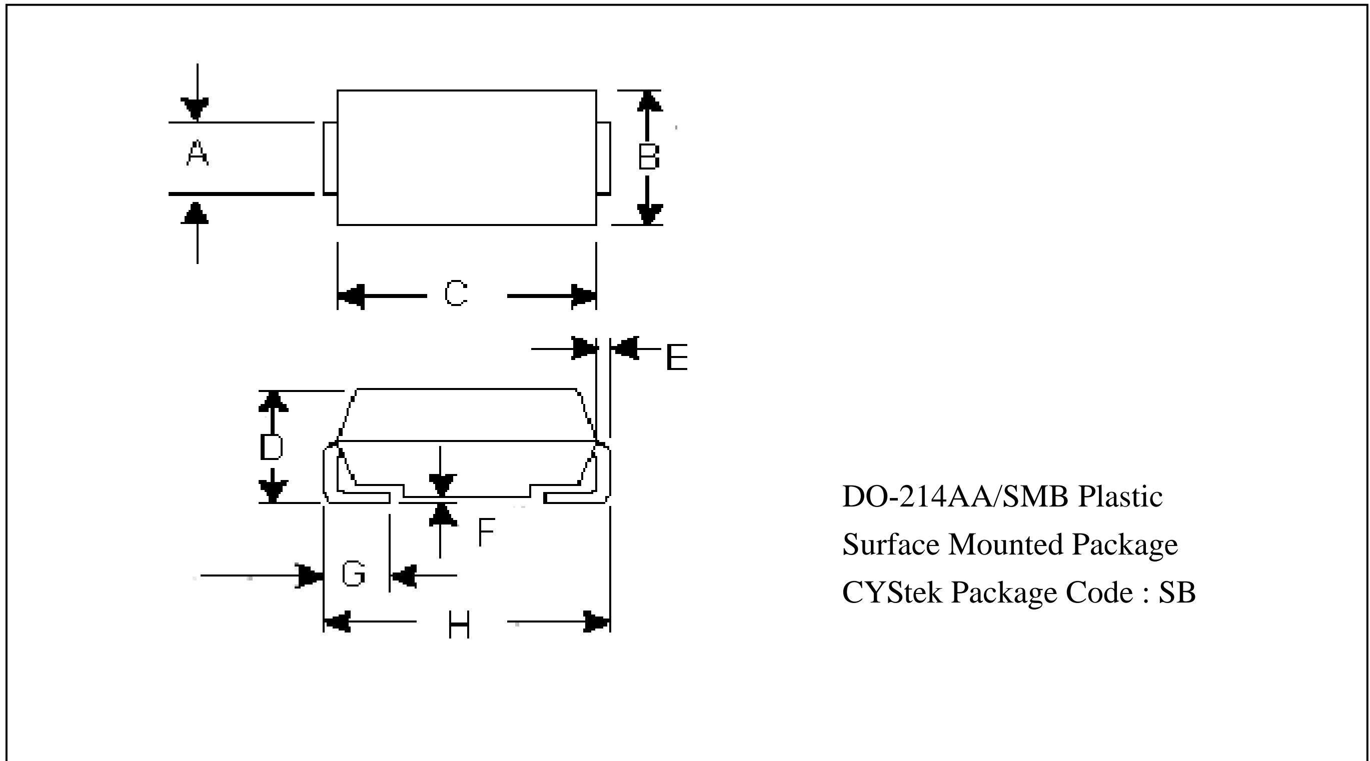
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_{S} min) −Temperature Max(T_{S} max) −Time(ts_{min} to ts_{max})	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	 183°C 60-150 seconds	 217°C 60-150 seconds
Peak Temperature(T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

DO-214AA/SMB Dimension



*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.075	0.083	1.91	2.11	E	0.006	0.012	0.15	0.31
B	0.130	0.155	3.30	3.94	F	0.002	0.008	0.05	0.20
C	0.154	0.185	3.90	4.70	G	0.035	0.056	0.90	1.41
D	0.078	0.103	1.99	2.61	H	0.200	0.220	5.08	5.59

Notes : 1.Controlling dimension : millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material :

- Lead : Pure tin plated.
- Mold Compound : Epoxy resin family, flammability solid burning class:UL94V-0.

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