

EST160NH10S

Power Schottky Rectifier Module

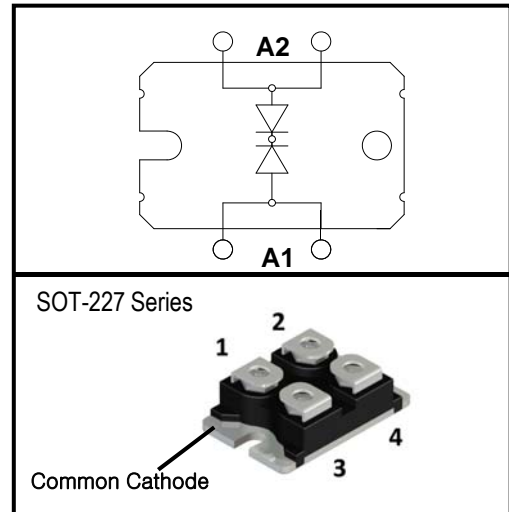
■ Features

- International standard package miniBLOC
- Epoxy meets UL 94V-0
- Very low Forward Voltage : $V_F(\text{typ.}) = 0.76\text{V}$
- Average Forward Current : $I_F(\text{AV}) = 160\text{A}$ @ $T_C = 100^\circ\text{C}$
- Ultra-Fast Reverse Recovery Time : $t_{rr}(\text{typ.}) = 100\text{ns}$
- Non Isolation Type Package

■ Applications

- Rectifiers in switch mode power supplies(SMPS)
- Free wheeling diode in low voltage converters

Equivalent Circuit and Package



Please see the package out line information

■ Absolute Maximum Ratings @ $T_C=25^\circ\text{C}$ (Per Leg)

Symbol	Parameter	Conditions	Ratings	Unit
V_{RRM}	Maximum Repetitive Reverse Voltage		100	V
V_{RSM}	Maximum Non-repetitive Reverse Voltage		100	V
I_{FRMS}	RMS Forward Current		200	A
I_{FAVM}	Maximum Average Forward Current	$T_C = 25^\circ\text{C}$	320	A
		$T_C = 100^\circ\text{C}$	160	A
I_{FSM}	Surge(non-repetitive) Forward Current	One Half Cycle at 60Hz, Peak Value	1400	A
E_{AS}	Single Pulsed Avalanche Energy	$I_{AS} = 50\text{A}$, $L=690\mu\text{H}$, Non repetitive	860	mJ
T_J	Junction Temperature	-	-40 ~ 150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-	-40 ~ 150	$^\circ\text{C}$
P_{tot}	Maximum Power Dissipation		357	W
M_d	Mounting screw torque	M4	1.45	N.m
	Mounting terminals screw torque	M4	1.45	N.m

■ Electrical Characteristics of SBD @ $T_C=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit	
V_R	Reverse Voltage	$I_R = 100\mu\text{A}$	100	-	-	V	
V_F	Forward Voltage	$I_{FM} = 160\text{A}$	$T_j = 25^\circ\text{C}$	-	0.76		V
			$T_j = 100^\circ\text{C}$	-	0.66	-	
I_{RRM}	Repetitive Peak Reverse Current	$T_C = 100^\circ\text{C}$, V_{RRM} applied	-	-	20	mA	
t_{rr}	Reverse Recovery Time	$I_{FM} = 160\text{A}$, $V_R = 50\text{V}$ $di/dt = -200\text{A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$	-	100	130	ns
			$T_j = 100^\circ\text{C}$	-	110	-	

■ Thermal Characteristics and Weight

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$R_{\theta JC}$	Junction-to-Case	per SBD	-	-	0.35	$^\circ\text{C}/\text{W}$
Weight	Weight of Module		-	-	30	g

■ Performance Curves

Fig. 1 Typical Forward Voltage Drop vs. Instantaneous Current

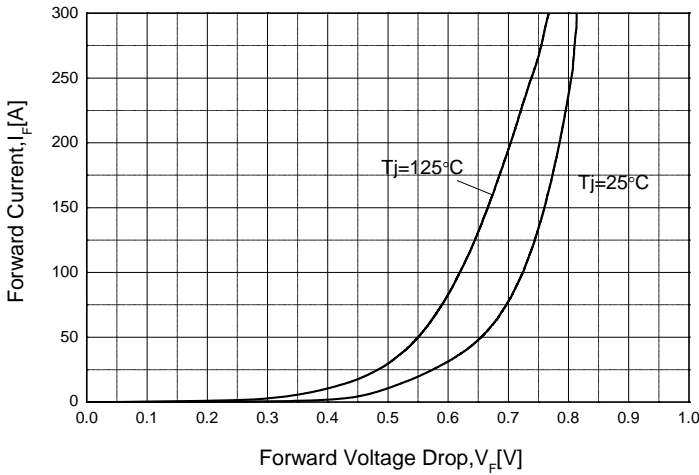


Fig. 2 Reverse voltage ($T_j=25^\circ\text{C}$)

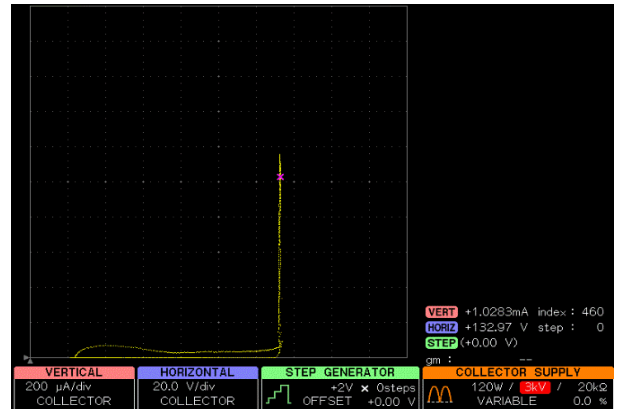


Fig. 3 Reverse voltage ($T_j=125^\circ\text{C}$)

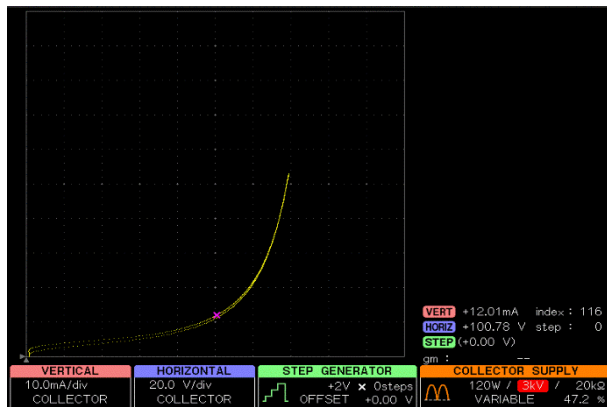


Fig. 4 Forward Current Derating Curve

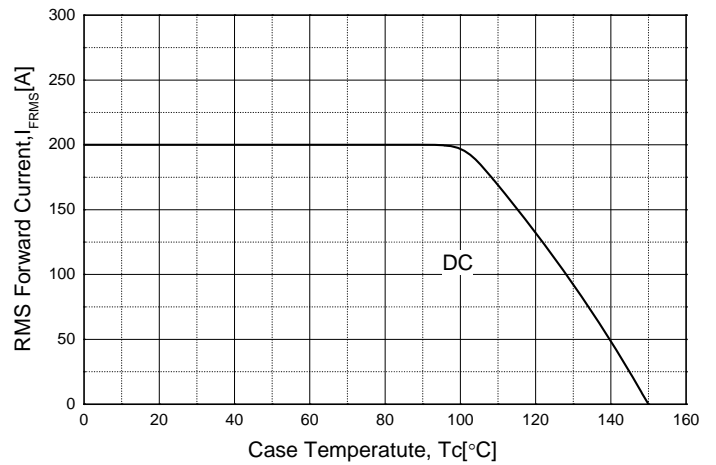
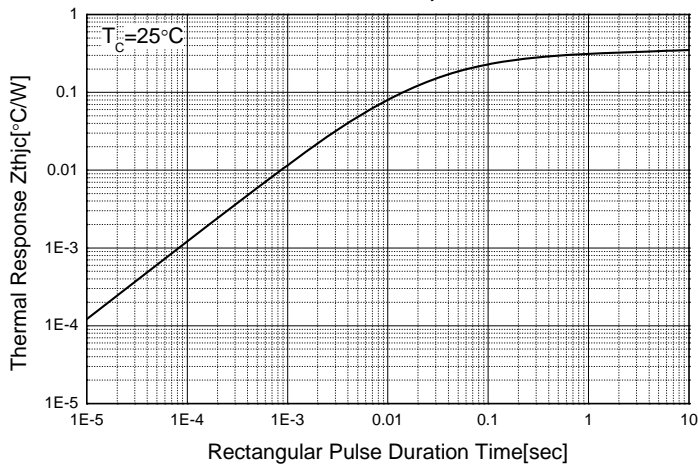


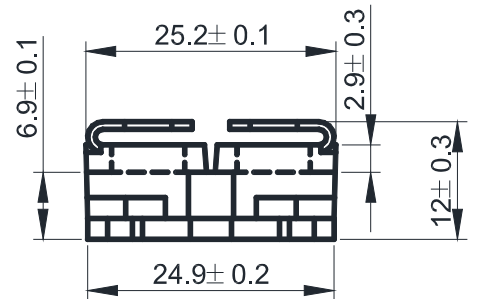
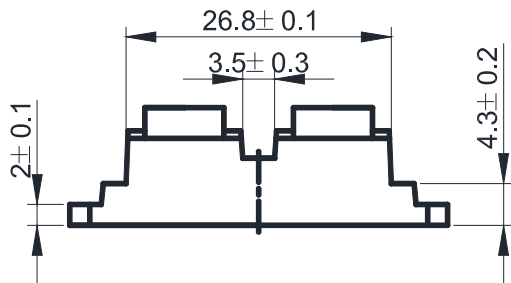
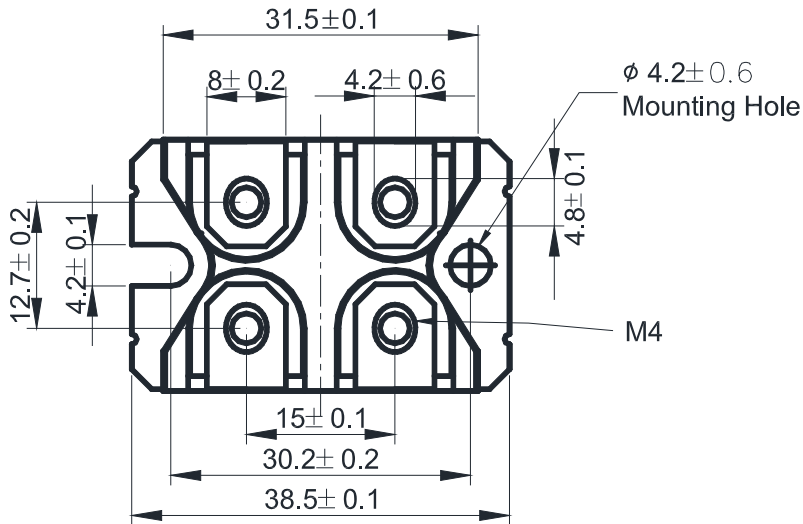
Fig. 5 Transient Thermal Impedance (Z_{thjc}) Characteristics



■ Package Out Line Information

SOT-227 Package

Dimensions in mm



■ Internal Circuit

