ESB100NH40SN

Ultra-Fast Soft Recovery Diode Module

Description

Ultra-FRD module devices are optimized to reduce losses and EMI/RFI in high frequency power conditioning electrical systems. These diode modules are ideally suited for power converters, motors drives and other applications where switching losses are significant portion of the total losses.

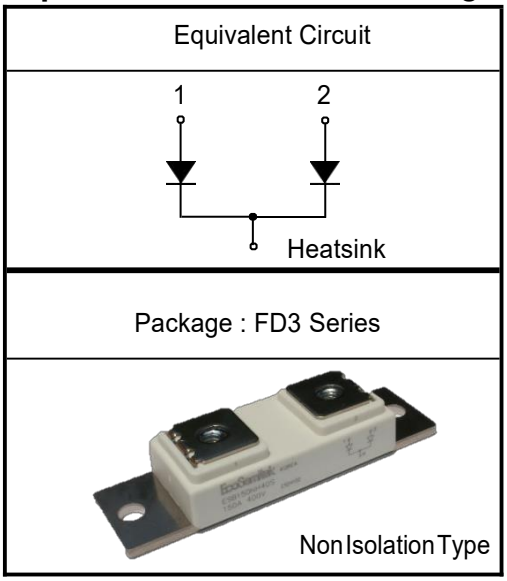
Features

- ☞ Repetitive Reverse Voltage : V_{RRM} = 400V
- ☞ Low Forward Voltage Drop : V_F(typ.) = 1.05V
- ☞ Average Forward Current : I_F(AV.) = 100A @ Tc = 100℃
- ☞ Ultra-Fast Reverse Recovery Time : t_{rr}(typ.) = 90 ns
- ☞ Extensive Characterization of Recovery Parameters
- ☞ Reduced EMI and RFI
- ☞ Non Isolation Type Package

Applications

Motor Drives, Free wheel use, High Power Converters, Welders, Various Switching and Telecommunication Power Supply.

Equivalent Circuit and Package



Please see the package Out line information

Absolute Maximum Ratings @ T_j=25°C(Per Leg)

Symbol	Parameter	Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		400	V
$V_{R(DC)}$	Reverse DC Voltage		320	V
$I_{F(AV)}$	Average Forward Current @ Tc = 25℃ @ Tc = 100℃	Resistive Load	200 100	A A
I_{FSM}	Surge(non-repetitive) Forward Current	One Half Cycle at 60Hz, Peak Value	1400	A
I^2t	I^2t for Fusing	Value for One Cycle Current, t_w = 8.3ms, T_j = 25℃ Start	8.13* 10^3	A^2s
T_j	Junction Temperature		-40 ~ 175	℃
T_{stg}	Storage Temperature		-40 ~ 150	℃
P_d	Maximum Power Dissipation		1000	W
-	Mounting Torque		4.0	N.m
-	Terminal Torque		3.0	N.m
-	Weight	Typical Including Screws	95	g

Thermal Characteristics

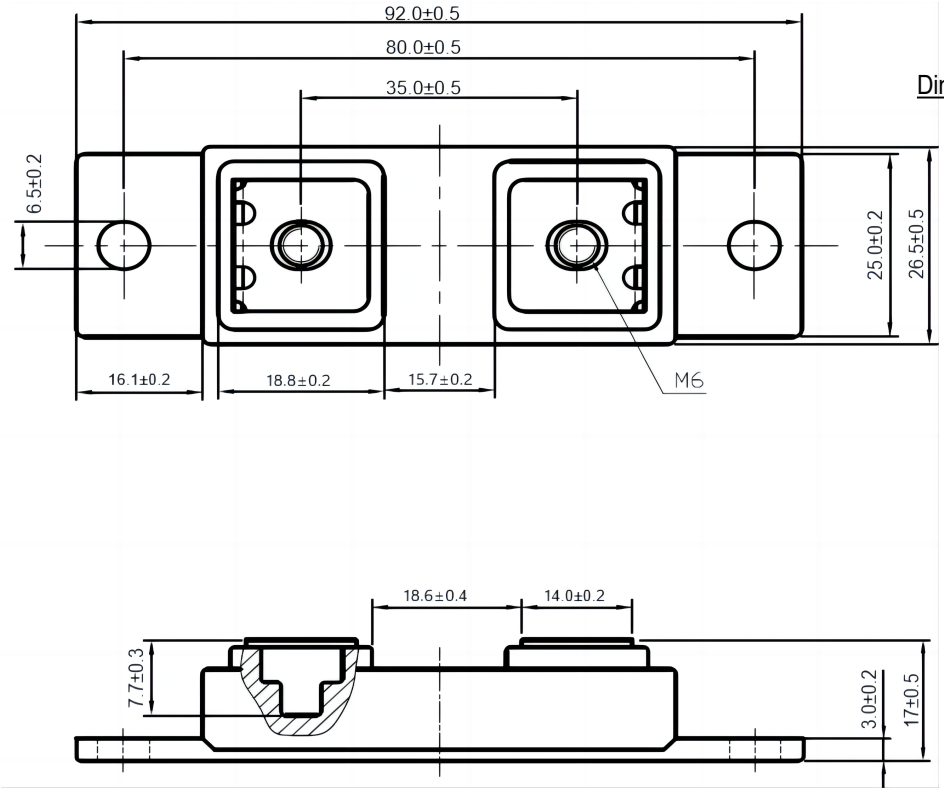
Symbol	Parameter	Conditions	Values			Unit
			Min.	Typ.	Max.	
$R_{th(j-c)}$	Thermal Resistance	Junction to Case	-	-	0.15	℃/W

Electrical Characteristics @ T_j=25℃ (unless otherwise specified)

Symbol	Parameter	Conditions		Values			Unit
				Min.	Typ.	Max.	
V_R	Cathode Anode Breakdown Voltage	I_R = 100uA		400	-	-	V
V_{FM}	Maximum Forward Voltage	I_{FM} = 100A, T_c = 25℃		-	1.05	1.4	V
		I_{FM} = 100A, T_c =100℃		-	0.95	-	V
I_{RRM}	Repetitive Peak Reverse Current	T_C = 100℃, V_{RRM} applied		-	-	1.0	mA
t_{rr}	Reverse Recovery Time	I_{FM} = 100A, V_R = 200V di/dt=-200A/us	T_c = 25℃	-	90	120	ns
			T_c = 100℃	-	120	-	ns

Package Out Line Information

FD3 Package



Internal Circuit