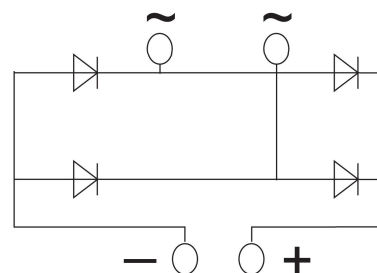


ESQ150QN60SN

Ultra-Fast Reverse Recovery Diode Module

Feature

- Repetitive Reverse Voltage : $V_{RRM}=600V$
- Low Forward Voltage : $V_F(max) = 1.4V$
- Average Forward Current : $I_F(Av.)=150A$ @ $TC=100^{\circ}C$
- Ultra-Fast Reverse Recovery Time : $trr(typ.) = 50ns$
- Extensive Characterization of Recovery Parameters
- Reduced EMI and RFI
- Isolation Type Package



Applications

- High Speed & High Power converters, Welders
- Various Switching and Telecommunication Power Supply

Absolute Maximum Ratings @ $T_c = 125^{\circ}C$ (Per Leg)

Symbol	Parameter	Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	$V_{RRM} t_p=10ms$ $V_{RSM}=V_{DRM}+V_{RRM}+200V$	600	V
I_O	DC output current	Single-phase full wave rectifying circuit, $TC=100^{\circ}C$	150	A
I_{FSM}	Surge(non-repetitive) Forward Current	10ms half sine wave $V_R=0.6V_{RRM}$	3.5	KA
I^2_t	I^2t for Fusing coordination		6.12×10^3	A^2s
V_{FO}	Threshold voltage		0.8	V
r_F	Forward slop resistance		4.0	m
T_j	Junction Temperatur		-40~150	$^{\circ}C$
T_{stg}	Storage Temperatur		-40~125	
Visol	Isolation Voltag	@ AC 1minute	3000	V
-	Mounting Torqu		5.0	N.m
-	Terminal Torqu		5.0	
-	Weigh	Typical Including Screw	155	g

Thermal Characteristics

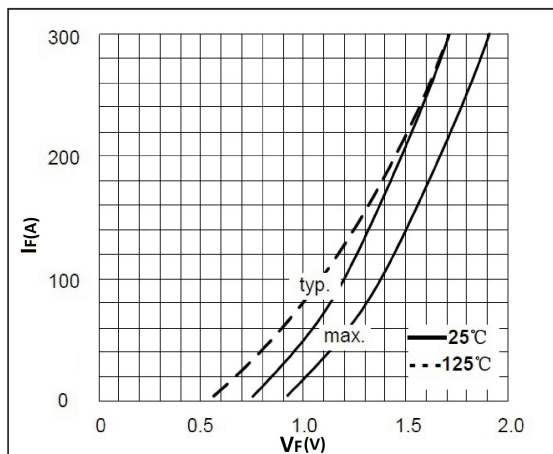
Symbol	Parameter	Conditions	Value			Unit
			Min	Typ	Max	
$R_{th(j-c)}$	Thermal Resistance	Junction to Cas	-	-	0.150	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics @ $T_c = 25^{\circ}\text{C}$ (unless otherwise specified)

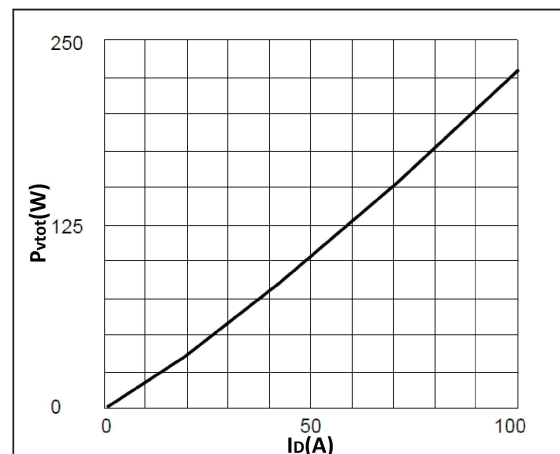
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_R	Cathode Anode Breakdown Voltage	$I_R = 100\mu\text{A}$	600	-	-	V
V_{FM}	Diode Maximum Forward Voltage	$I_F = 150\text{A}$	-	-	1.4	
I_{RRM}	Diode Peak Reverse Recovery Current	$V_{RRM}, V_{applied} T_C = 100^{\circ}\text{C}$	-	-	10	mA
T_{RR}	Diode Reverse Recovery Time	$I_F = 1\text{A}, V_R = 30\text{V}, di/dt = -200\text{A}/\mu$	-	-	50	ns

Electrical characteristics(Curves)

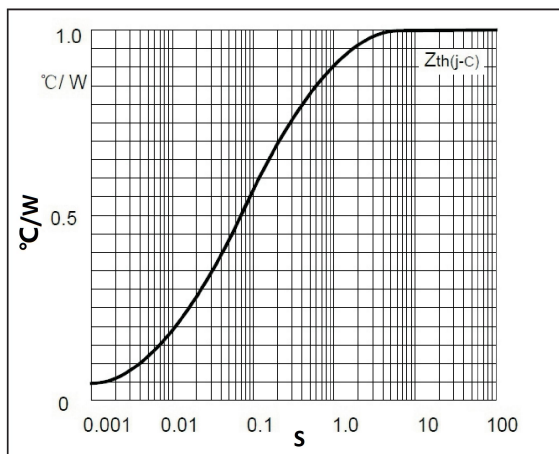
Forward Characteristics



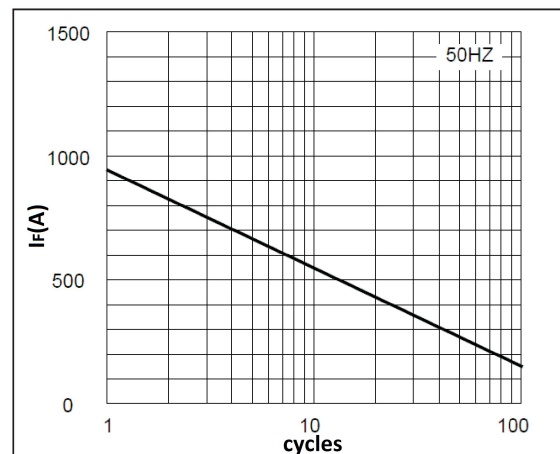
Power dissipation



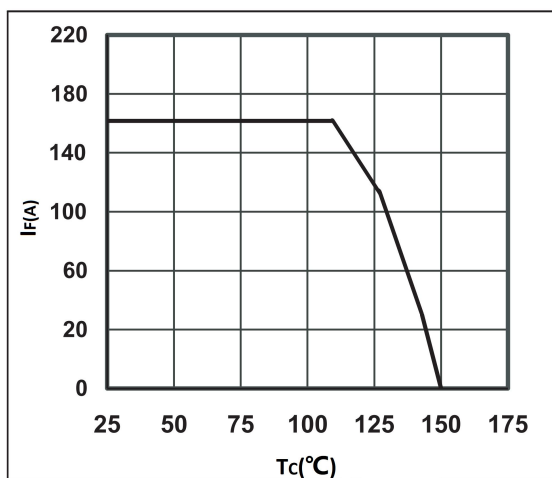
Transient thermal impedance



Max Non-Repetitive Forward Surge Current



Forward Current Derating Curve



Package Dimension

