

ESQ100QN60SN

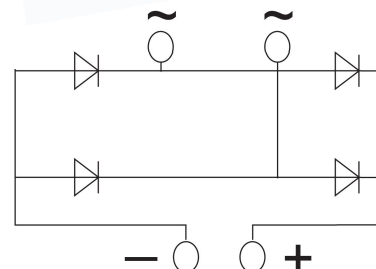
Ultra-Fast Reverse Recovery Diode Module

Feature

- Repetitive Reverse Voltage : $V_{RRM}=600V$
- Low Forward Voltage : $V_F(max) = 2.3V$
- Average Forward Current : $I_F(Av.)=100A$ @ $TC=100^{\circ}C$
- Ultra-Fast Reverse Recovery Time : $trr(typ.) = 75ns$
- 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, $TC=100^{\circ}C$	100	A
I_{FSM}	Surge(non-repetitive) Forward Current	10ms half sine wave $V_R=0.6V_{RRM}$	0.92	KA
I^2_t	I^2t for Fusing coordination		4.2×10^3	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	2500	V
-	Mounting Torqu		5.0	N.m
-	Terminal Torqu		5.0	
-	Weigh	Typical Including Screw	175	g

Thermal Characteristics

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

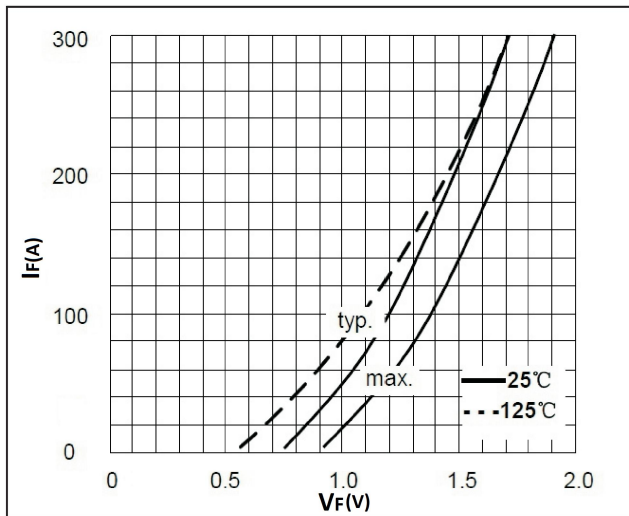
Electrical Characteristics @T_C = 25°C (unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_R	Cathode Anode Breakdown Voltage	$I_R=100\mu A$	600	-	-	V
V_{FM}	Diode Maximum Forward Voltage	$I_F=100A$	-	-	2.3	
I_{RRM}	Diode Peak Reverse Recovery Current	$V_{RRM}, V_{applied} T_C=100^\circ C$	-	-	10	mA
T_{RR}	Diode Reverse Recovery Tim	$I_F=1A, V_R=30V, di/dt = -200A/\mu$	-	-	75	ns

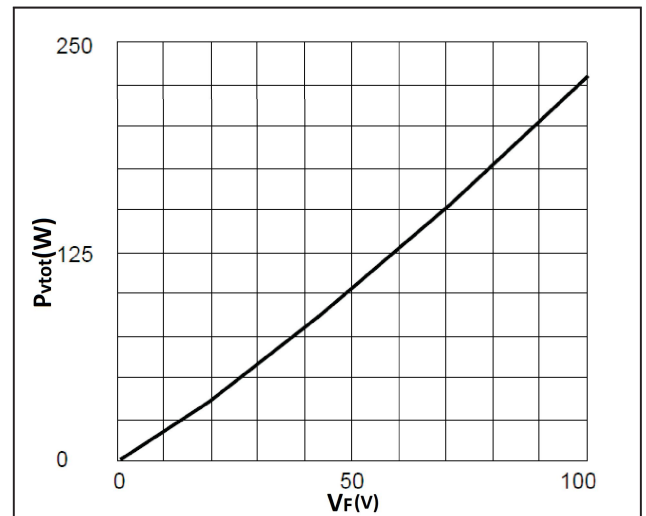
Value	Package
ESG100QN60SN	4FS
ESQ100QN60SN	4FM

Electrical characteristics(Curves)

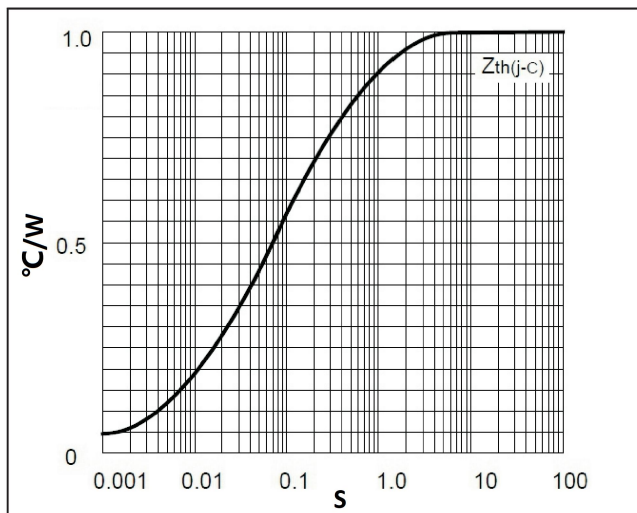
Forward Characteristics



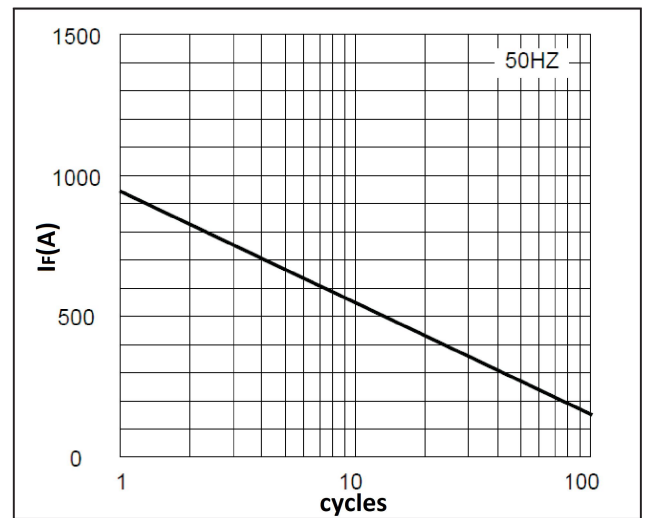
Power dissipation



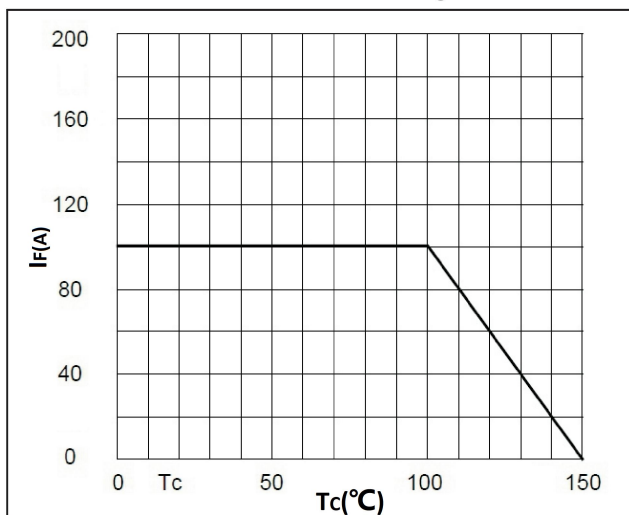
Transient thermal impedance



Max Non-Repetitive Forward Surge Current



Forward Current Derating Curve



Package Dimension

