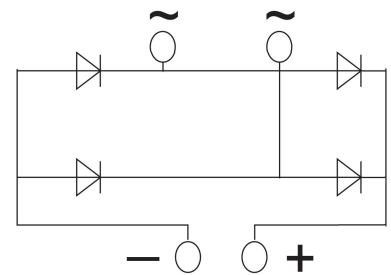


## ESG80QN60SN

### Ultra-Fast Reverse Recovery Diode Module

### Feature

- Repetitive Reverse Voltage :  $V_{RRM}=600V$
- Low Forward Voltage :  $V_F(\max) = 1.4V$
- Average Forward Current :  $I_F(\text{Av.})=80A @TC=100^\circ C$
- Ultra-Fast Reverse Recovery Time :  $t_r(\text{typ.}) = 50ns$
- 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, $TC=100^\circ C$	80	A
$I_{FSM}$	Surge(non-repetitive) Forward Current	10ms half sine wave $V_R=0.6V_{RRM}$	3.5	KA
$I_t^2$	$I^2t$ for Fusing coordination		$6.12 \cdot 10^3$	$A^2s$
$V_{FO}$	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	155	

## Thermal Characteristics

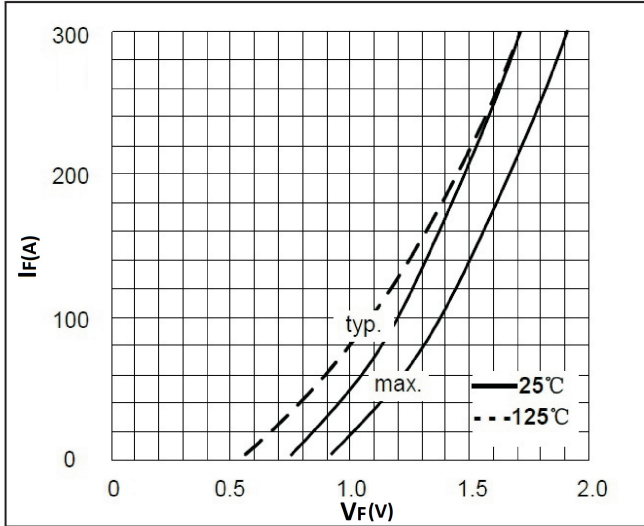
Symbol	Parameter	Conditions	Value			Unit
			Min	Typ	Max	
$R_{th(j-c)}$	Thermal Resistance	Junction to Cas	-	-	0.150	$^{\circ}C/W$

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

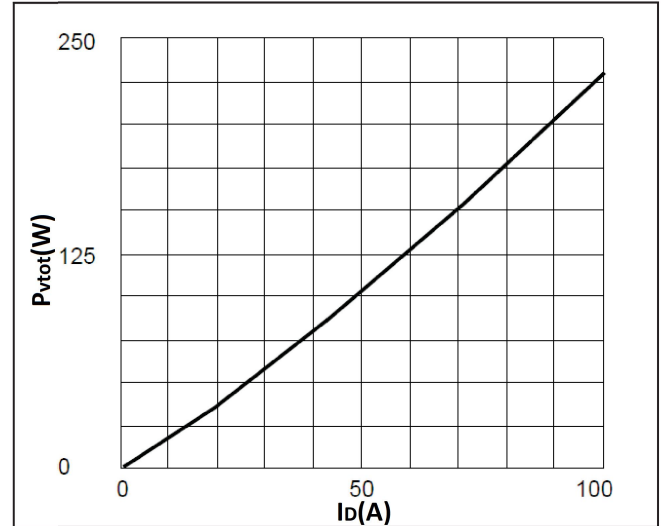
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_R$	Cathode Anode Breakdown Voltage	$I_R=100\mu A$	600	-	-	V
$V_{FM}$	Diode Maximum Forward Voltage	$I_F=80A$	-	-	1.4	
$I_{RRM}$	Diode Peak Reverse Recovery Current	$V_{RRM}, V_{applied} T_c=100^{\circ}C$	-	-	10	mA
$T_{RR}$	Diode Reverse Recovery Tim	$I_F=1A, V_R=30V, di/dt = -200A/\mu$	-	-	50	ns

# Electrical characteristics(Curves)

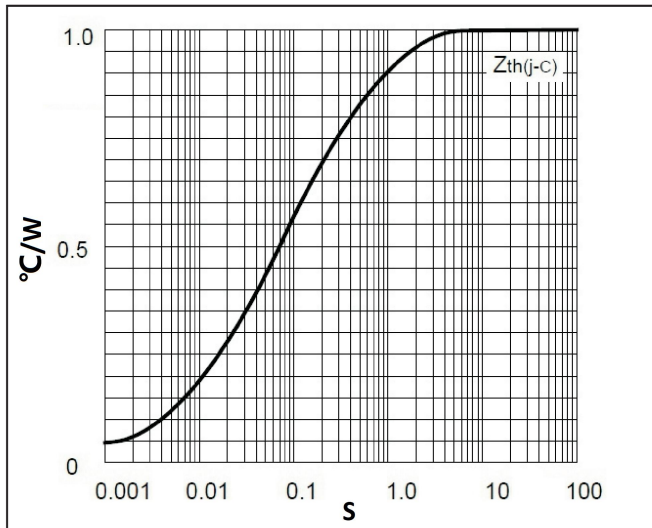
Forward Characteristics



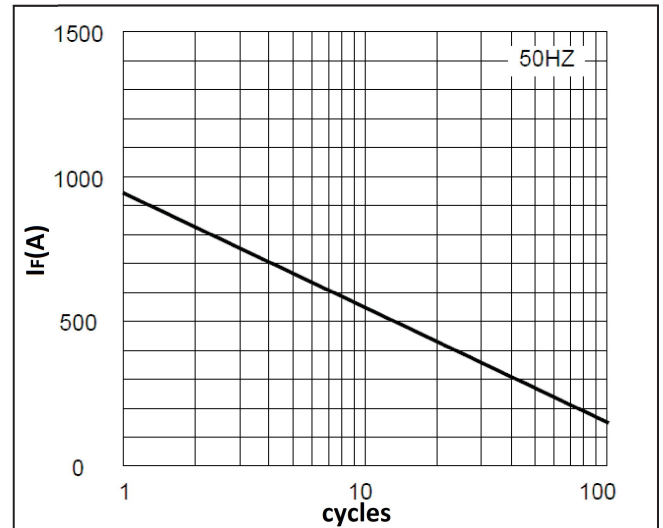
Power dissipation



Transient thermal impedance



Max Non-Repetitive Forward Surge Current



Package Dimension

