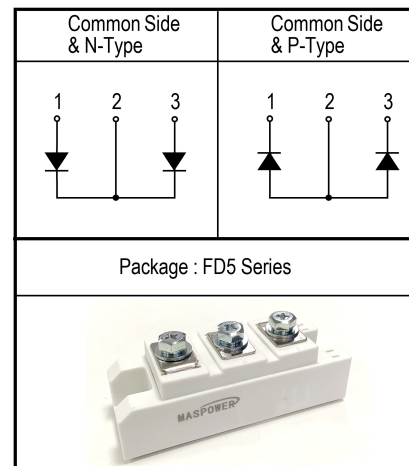


ESD150NC120SN/ESD150PC120SN

Ultra-Fast Reverse Recovery Diode Module

Featur

- Repetitive Reverse Voltage : $V_{RRM}=1200V$
- Low Forward Voltage : $V_F(\text{typ.}) = 2.15V$
- Average Forward Current : $I_F(\text{Av.})=150A$ @ $T_C=100^{\circ}C$
- Ultra-Fast Reverse Recovery Time : $t_{rr}(\text{typ.}) = 135ns$
- 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 @ $T_c = 25^{\circ}C$ (Per Leg)

Symbol	Parameter		Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage			1200	V
$V_{R(DC)}$	Reverse DC Voltag			960	
$I_{F(AV)}$	Average Forward Current	$T_c = 25^{\circ}C$	Resistive Loa	300	A
		$T_c = 100^{\circ}C$		150	
I_{FSM}	Surge(non-repetitive) Forward Current		One Half Cycle at 60Hz, Peak Value	2100	
I^2_t	I^2t for Fusin		ValueforOneCycle Current, $t_w = 8.3ms, T_j = 25^{\circ}C$ Start	1.83×10^4	A^2s
T_j	Junction Temperatur			-40~150	$^{\circ}C$
T_{stg}	Storage Temperatur			-40~125	
Visol	Isolation Voltag		@ AC 1minute	2500	V
P_d	Maximum Power Dissipatio			960	W
-	Mounting Torqu			4.0	N.m
-	Terminal Torqu			3.0	
-	Weigh		Typical Including Screw	180	g

Thermal Characteristi

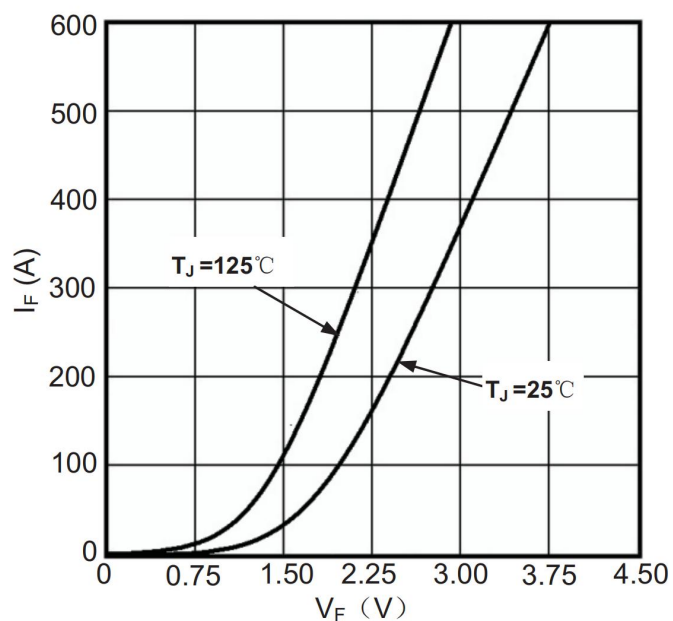
Symbol	Parameter	Conditions	Valu			Unit
			Min	Typ	Max	
$R_{th(j-c)}$	Thermal Resistanc	Junction to Cas	-	-	0.13	$^{\circ}\text{C}/\text{W}$

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

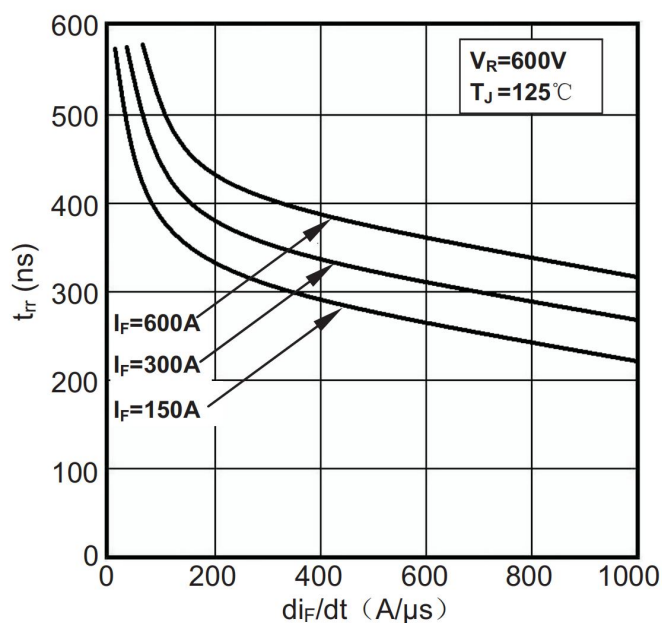
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_R	Cathode Anode Breakdown Voltage	$I_R=100\mu\text{A}$	1200	-	-	V
V_{FM}	Diode Maximum Forward Voltag	$I_F=100\text{A}$	$T_C=25^{\circ}\text{C}$	-	2.15	
			$T_C=100^{\circ}\text{C}$	-	2.10	
I_{RRM}	Diode Peak Reverse Recovery Curren	$V_{RRM}, V_{applied} T_C=100^{\circ}\text{C}$	-	-	1	mA
T_{RR}	Diode Reverse Recovery Tim	$I_F=1\text{A}, V_R=30\text{V}, di/dt = -200\text{A}/\mu\text{s} T_C=25^{\circ}\text{C}$	-	135	155	ns
T_{RR}	Diode Reverse Recovery Tim	$I_F=100\text{A}, V_R=300\text{V}$ $di/dt = -200\text{A}/\mu\text{s}$	$T_C=25^{\circ}\text{C}$	-	125	
			$T_C=100^{\circ}\text{C}$	-	160	

Electrical characteristics(Curves)

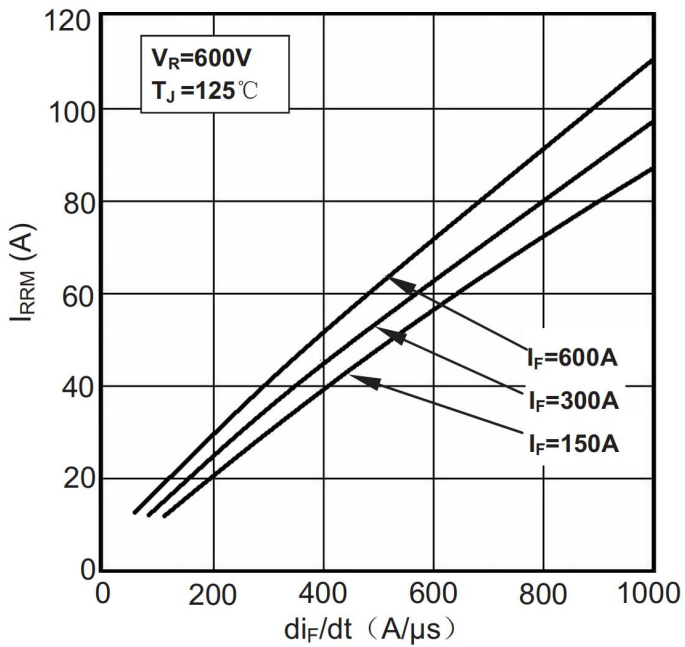
Forward Voltage Drop vs Forward Current



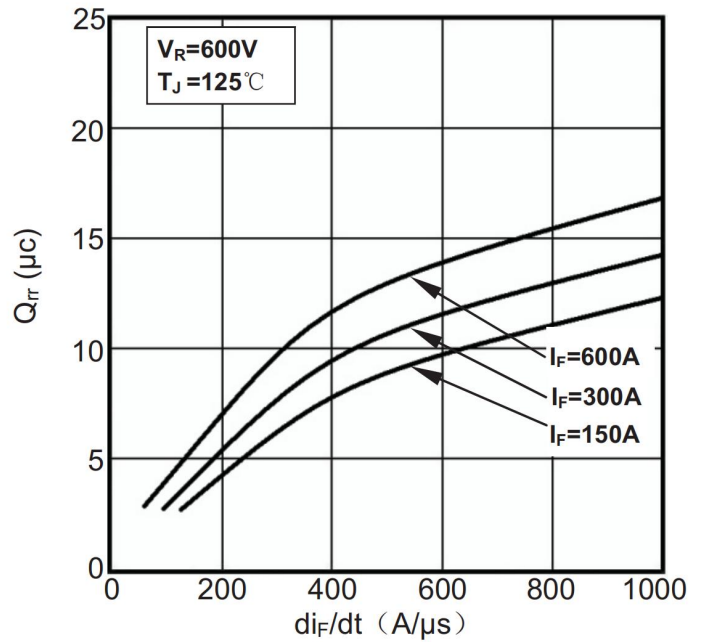
Reverse Recovery Time vs di_F/dt



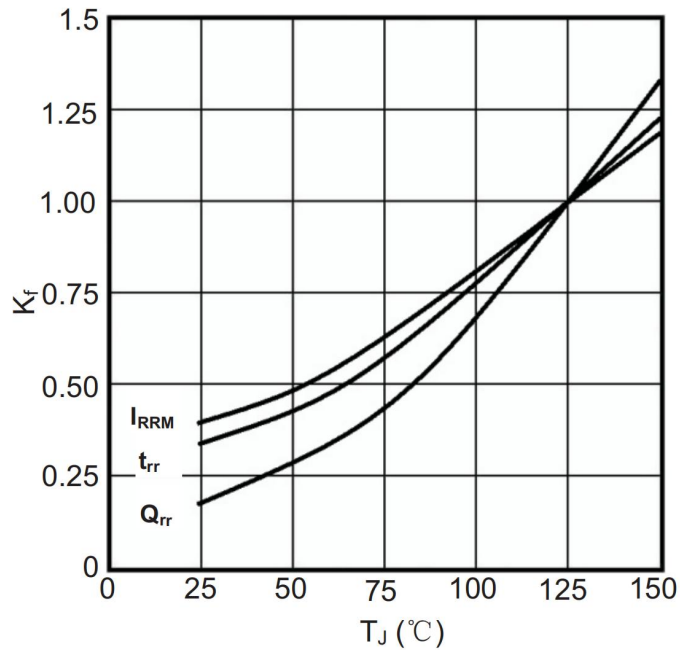
Reverse Recovery Current vs di_F/dt



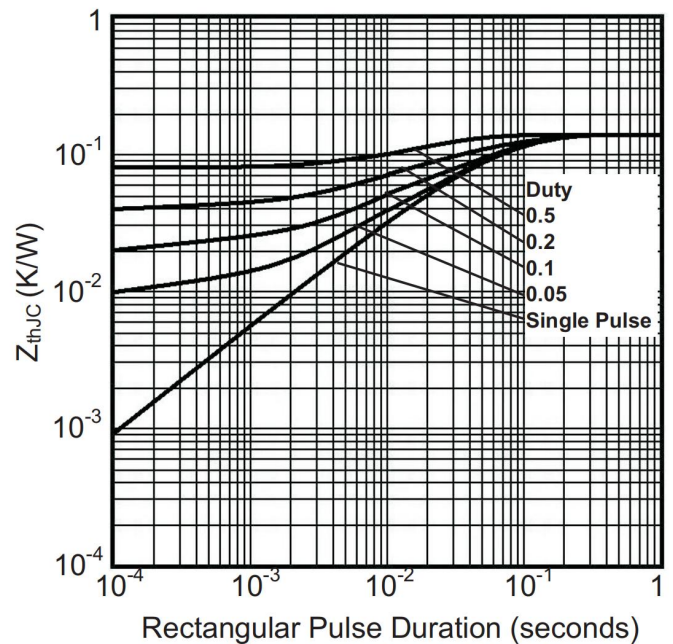
Reverse Recovery Charge vs di_F/dt



Dynamic Parameters vs Junction Temperature



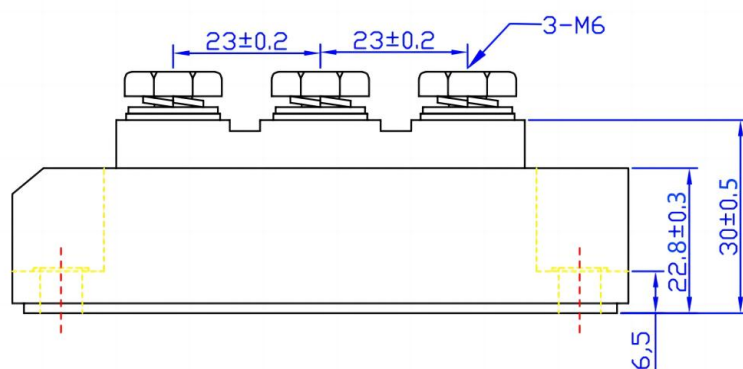
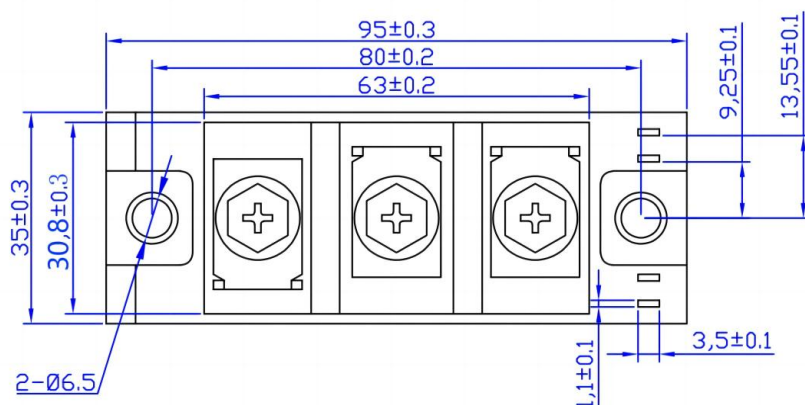
Transient Thermal Impedance



Package Out Line Information

FD5 Package

Dimensions in mm



Internal Circuit

