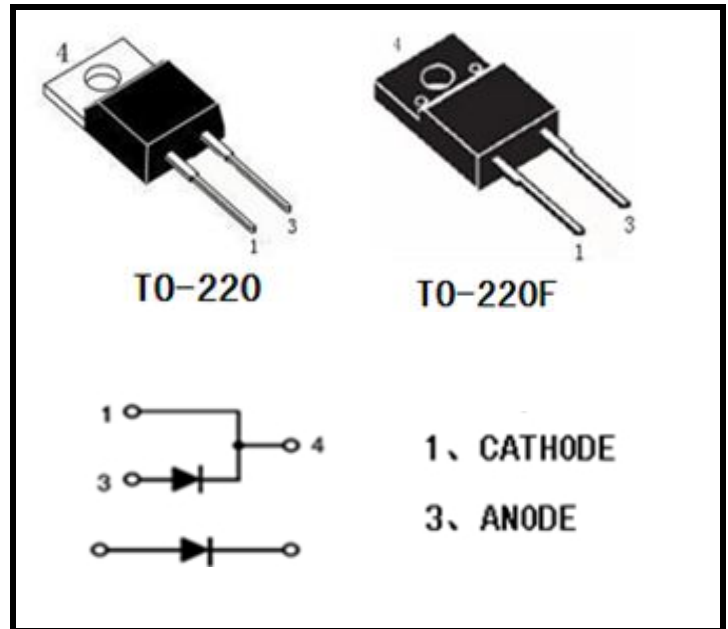


**PRODUCT FEATURES**

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

**APPLICATIONS**

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS


**ABSOLUTE MAXIMUM RATINGS**

TC=25° C unless otherwise specified

Symbol	Parameter	Test Conditions	Value	Unit
$V_R$	D.C. Reverse Voltage		600	V
$V_{RRM}$	Repetitive Reverse Voltage		600	V
$I_{F(AV)}$	Average Forward Current	$T_C=110^\circ\text{C}$ , Duty=0.5	10	A
$I_{FM}$	Peak Repetitive Forward Current	$T_C=110^\circ\text{C}$ , Duty=0.5	20	A
$I_{FSM}$	Non-Repetitive Surge Forward Current	$T_J=45^\circ\text{C}$ , 8.3ms	120	A
$T_J$	Junction Temperature		-55 to +150	°C
$T_{STG}$	Storage Temperature Range		-55 to +150	°C

**ELECTRICAL AND THERMAL CHARACTERISTICS**

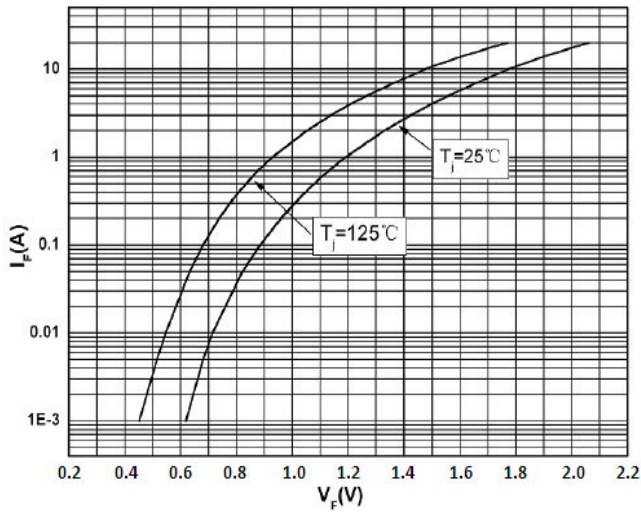
TC=25° C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
$I_{RM}$	Reverse Leakage Current	$V_R=600\text{V}$ , $T_J=25^\circ\text{C}$	--	--	25	$\mu\text{A}$	
		$V_R=600\text{V}$ , $T_J=125^\circ\text{C}$	--	--	500	$\mu\text{A}$	
$V_F$	Forward Voltage	$I_F=10\text{A}$ , $T_J=25^\circ\text{C}$	--	1.8	2.4	V	
		$I_F=10\text{A}$ , $T_J=125^\circ\text{C}$	--	1.5	--	V	
$t_{rr}$	Reverse Recovery Time ( $I_F=1\text{A}$ , $V_R=30\text{V}$ , $di_F/dt=-200\text{A}/\mu\text{s}$ )		--	18	--	ns	
$t_{rr}$	Reverse Recovery Time	$I_F=10\text{A}$ $V_R=400\text{V}$ $di_F/dt=-200\text{A}/\mu\text{s}$	$T_J=25^\circ\text{C}$	--	30	--	ns
$t_{rr}$	Reverse Recovery Time		$T_J=125^\circ\text{C}$	--	60	--	ns
$Q_{rr}$	Reverse Recovery Charge		$T_J=125^\circ\text{C}$	--	150	--	nC
$I_{RRM}$	Max. Reverse Recovery Current	$T_J=125^\circ\text{C}$	--	4.5	--	A	

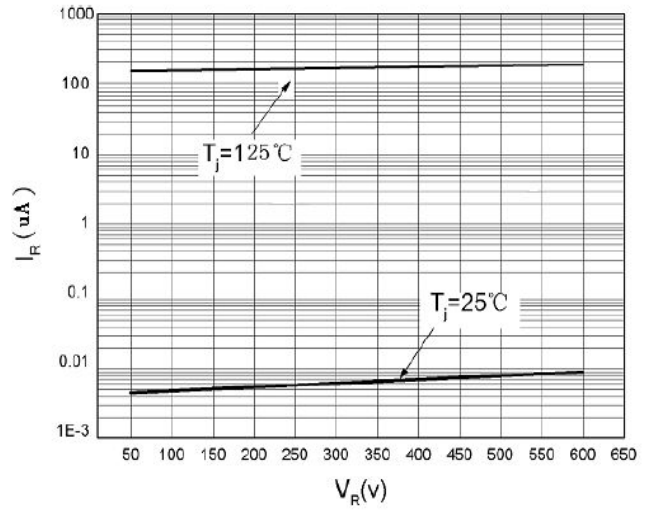
**THERMAL CHARACTERISTICS**

Rating	Symbol	Value		Unit
Maximum Thermal Resistance	$\theta_{JC}$	TO-220	2.5	°C/W
		TO-220F	4	

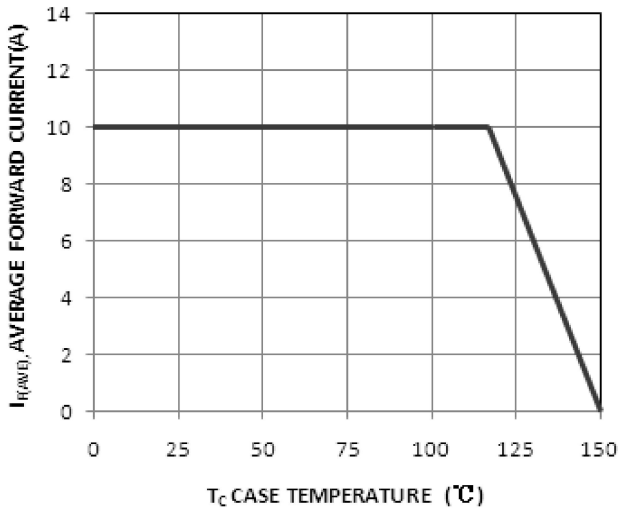
**Characteristics Curves**



**Typical Forward Voltage Per Diode**



**Typical Reverse Current Per Diode**

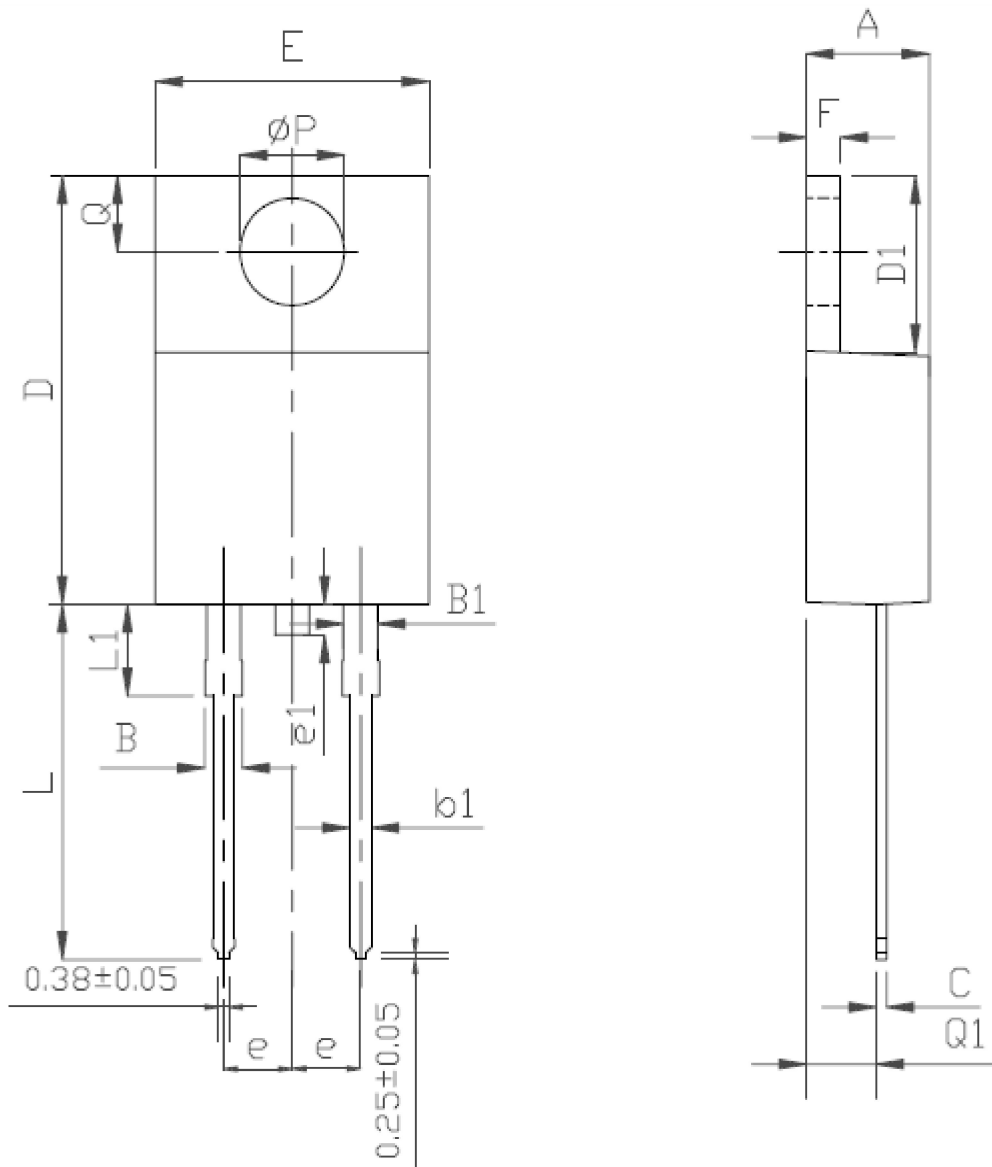


**Average Forward Current vs. Case Temperature Per Diode**

**TO-220 MECHANICAL DATA**

UNIT: mm

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	4		4.8	e		2.54	
B	1.2		1.4	e1	1		1.5
B1	1		1.4	F	1.1		1.4
b1	0.65		1	L	12.5		14.5
c	0.4		0.55	L1	3	3.5	4
D	15		16.5	ΦP		3.8	
D1	5.9		6.9	Q	2.5		3
E	9.9		10.7	Q1	2		2.9



**TO-220F MECHANICAL DATA**

UNIT: mm

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	4.5		4.9	E1	6.5	7	7.5
A1	2.3		2.9	e	2.44	2.54	2.64
b	0.45		0.9	e1	1		1.5
b1	1.1		1.7	L	12.5		14.3
b2	1.2		1.4	L1	9.45		10.05
c	0.35		0.65	L2	15		16
D	14.5		17	L3	3.2		4.4
D1	6.1		6.9	ΦP	3		3.3
E	9.6		10.3	Q	2.5		2.9

