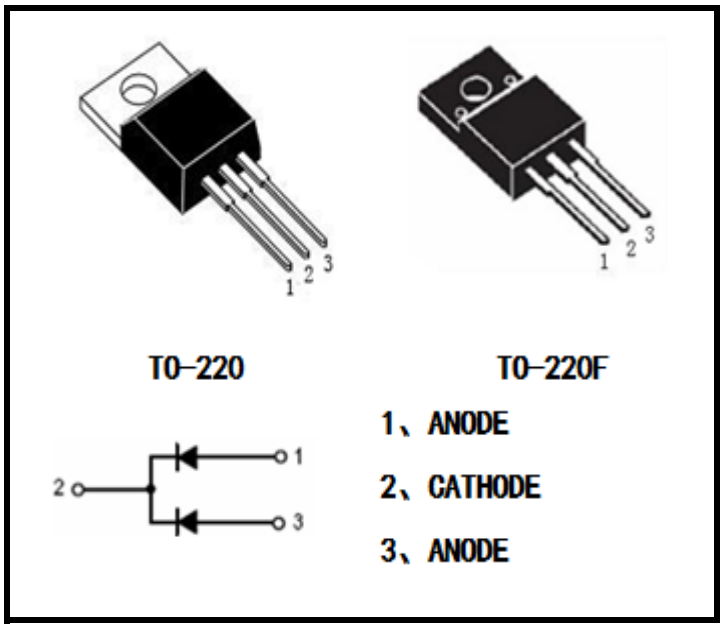
PRODUCT FEATURES

- 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		400	V
V_{RRM}	Repetitive Reverse Voltage		400	V
$I_{F(AV)}$(per leg)	Average Forward Current	T_C=110°C, Duty=0.5	5	A
$IF_{(AV)}$(Totel)			10	
I_{FM}	Peak Repetitive Forward Current	TC=110°C, Duty=0.5	10	A
I_{FSM}	Non-Repetitive Surge Forward Current	T=45°C, 8.3ms	75	A
T_J	Junction Temperature		-55 to +150	°C
T_{STG}	Storage Temperature Range		-55 to +150	°C

ELECTRICAL AND THERMAL CHARACTERISTICS

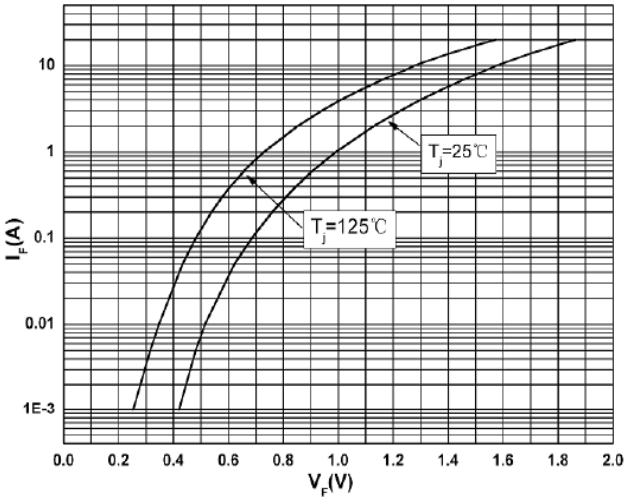
TC=25° C unless otherwise specified

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	V_R=400V, T_J=25°C		--	--	10	μA
		V_R=400V, T_J=125°C		--	--	150	μA
V_F	Forward Voltage	I_F=5A, T_J=25°C		--	1.2	1.8	V
		I_F=5A, T_J=125°C		--	1	--	V
t_{rr}	Reverse Recovery Time (I_F=1A, V_R=30V, di_F/dt=-200A/μs)			--	25	--	ns
t_{rr}	Reverse Recovery Time	I_F=5A VR=400V diF/dt=-200A/μs	T_J=25°C	--	50	--	ns
t_{rr}	Reverse Recovery Time		T_J=125°C	--	85	--	ns
Q_{rr}	Reverse Recovery Charge		T_J=125°C	--	180	--	nC
I_{RRM}	Max. Reverse Recovery Current		T_J=125°C	--	5	--	A

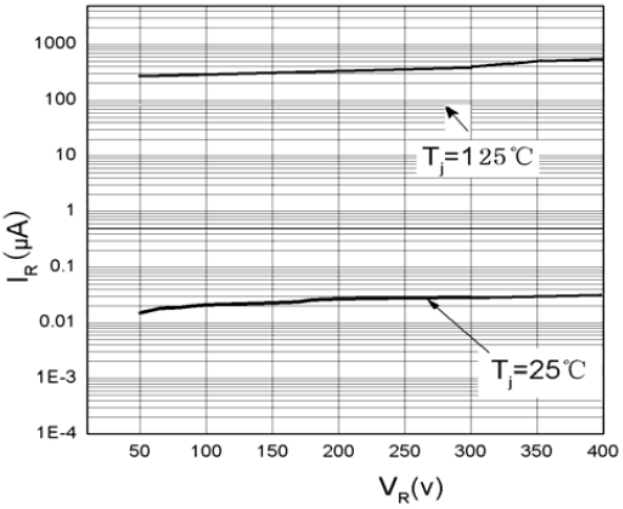
THERMAL CHARACTERISTICS

Rating	Symbol	Value		Unit
Maximum Thermal Resistance	θ_{JC}	TO-220	2	°C/W
		TO-220F	4	

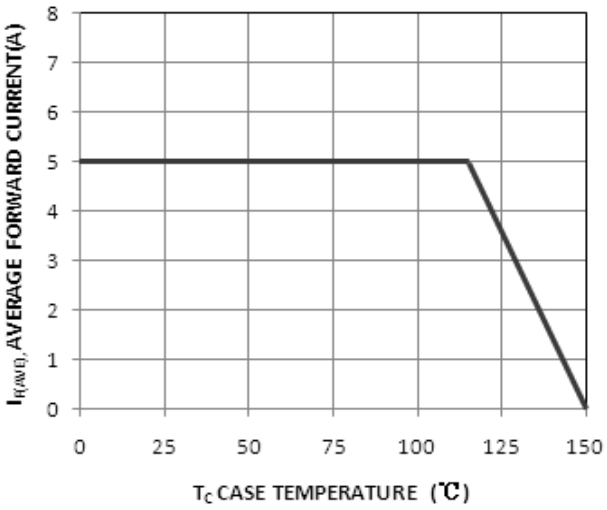
■ Characteristics Curves



Typical Forward Voltage Per Diode



Typical Reverse Current Per Diode

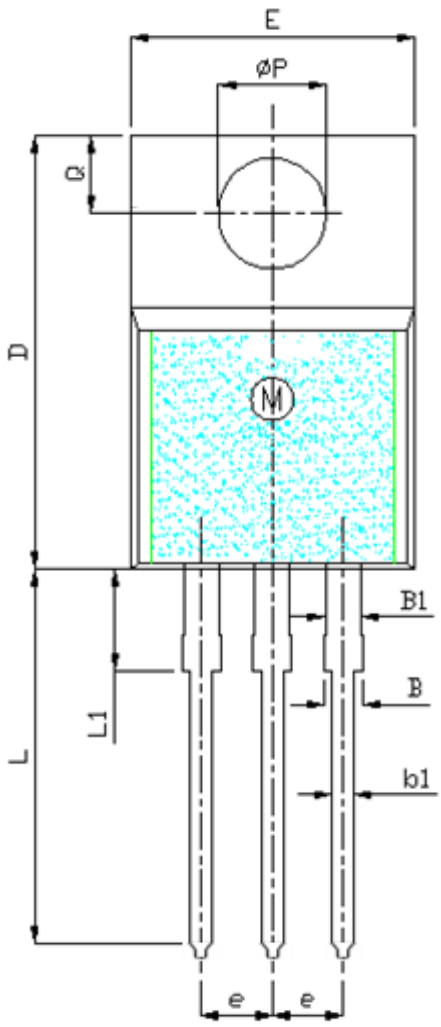


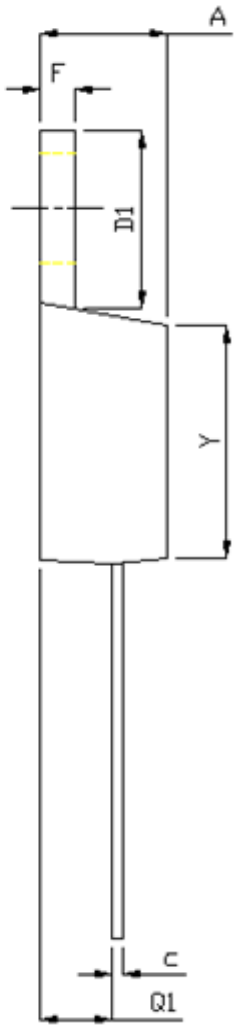
Average Forward Forward Current vs.
Case Temperature Per Diode

TO-220 MECHANICAL DATA

UNIT: mm

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	4.00		4.80	e	2.44	2.54	2.64
B	1.20		1.40	F	1.10		1.40
B1	1.00		1.40	L	12.50		14.50
b1	0.75		0.95	L1	3.00	3.50	4.00
c	0.40		0.55	ΦP	3.70	3.80	3.90
D	15.00		16.50	Q	2.50		3.00
D1	5.90		6.90	Q1	2.00		2.90
E	9.90		10.70	Y	8.02	8.12	8.22





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	0.65		0.9	L	12.5		14.3
b1	1.1		1.7	L1	9.45		10.05
b2	1.2		1.4	L2	15		16
c	0.35		0.65	L3	3.2		4.4
D	14.5		16.5	ΦP	3		3.3
D1	6.1		6.9	Q	2.5		2.9
E	9.6		10.3