## ■ 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

TO-220   TO-220F

1、CATHODE

3、ANODE
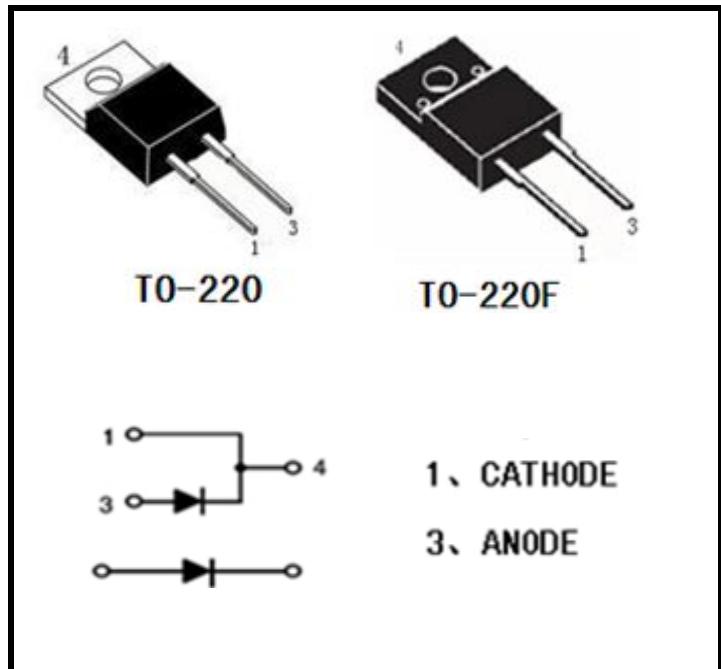
ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Max.	Unit
V_R	D.C. Reverse Voltage		600	V
V_{RRM}	Repetitive Reverse Voltage		600	V
$I_{F(AV)}$(per leg)	Average Forward Current	T_C=110°C, Duty=0.5	12	A
$I_{F(RMS)}$	RMS Forward Current	T_C=110°C, Duty=0.5	20	A
I_{FSM}	Non-Repetitive Surge Forward Current	T=45°C, 8.3ms,	150	A
T_J	Junction Temperature		-55 to +175	°C
T_{STG}	Storage Temperature Range		-55 to +175	°C

ELECTRICAL AND THERMAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	V_R=600V, T_J=25°C		--	--	10	μA
		V_R=600V, T_J=125°C		--	--	150	μA
V_F	Forward Voltage	I_F=12A, T_J=25°C		--	1.8	2.5	V
		I_F=12A, T_J=125°C		--	1.6	--	V
t_{rr}	Reverse Recovery Time (I_F=1A, V_R=30V, di_F/dt=-200A/μs)			--	17	30	ns
t_{rr}	Reverse Recovery Time	I_F=12A VR=400V diF/dt=-200A/μs	T_J=25°C	--	25	--	ns
t_{rr}	Reverse Recovery Time		T_J=125°C	--	65	--	ns
Q_{rr}	Reverse Recovery Charge		T_J=125°C	--	150	--	nC
I_{RRM}	Max. Reverse Recovery Current		T_J=125°C	--	3.5	--	A

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	LI	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
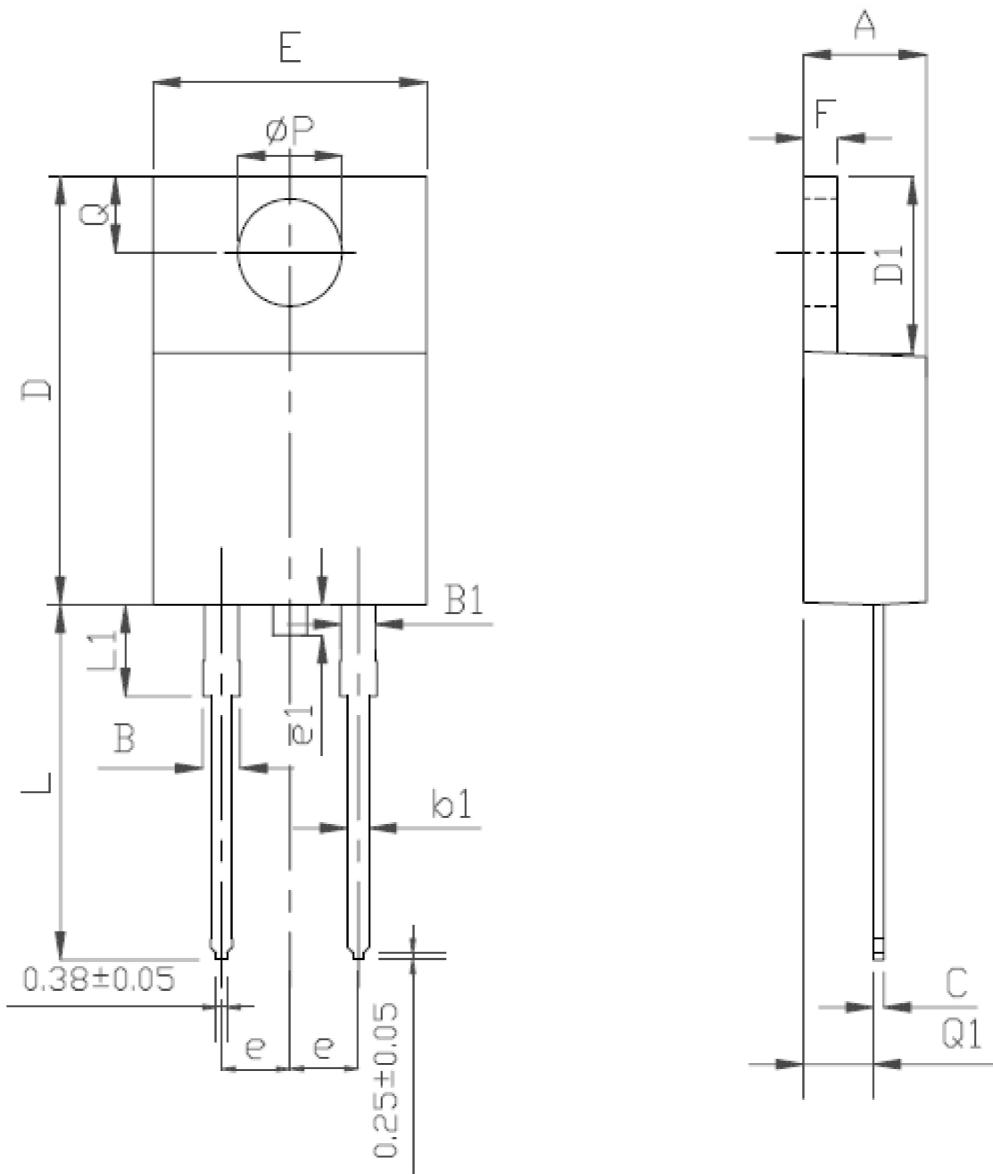
TO-220F MECHANICAL DATA

UNIT: mm

SYMBOL	MIN	NOM	MAX	SYMBOL	MIN	NOM	MAX
A	4.5		4.9	E1		7	
A1	2.3		2.9	e		2.54	
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		0.9	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