

FEATURES

- ✧ Hyper fast recovery time
- ✧ Soft recovery characteristics
- ✧ Low forward voltage
- ✧ Low stored charge
- ✧ Low leakage current
- ✧ Low recovery loss
- ✧ High junction temperature
- ✧ Epitaxial planar construction

MACHANICAL DATA

- ✧ Case: TO220AC and TO-220FAC outline plastic package
- ✧ Terminal: Matte tin plated, solderable per MIL-STD-750, Method 2026
- ✧ Molding Compound Flammability Rating:UL94-0
- ✧ High temperature soldering guaranteed: 260°C /10second

ORDERING INFORMATION

- ✧ Device: HFD15S120, HFD15S120F
- ✧ Package: TO-220AC, TO-220FAC
- ✧ Marking: As marked
- ✧ Material: RoHS compliant
- ✧ Packing: Tube
- ✧ Quantity box:1,000pcs

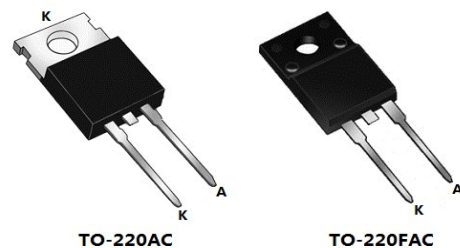
APPLICATIONS

- ✧ Switching mode power supply
- ✧ Motor control
- ✧ Inverters, Converters
- ✧ Freewheeling, Snubber, PFC circuits
- ✧ Polarity protection

SYMBOL



PACKAGE OUTLINE



ABSOLUTE MAXIMUM RATING (Tamb=25°C, unless otherwise specified)

Symbol	Parameter	Value	Units
V_{RRM}	DC Blocking Voltage	1200	V
$I_{F(AV)}$	Average Forward Current	15	A
I_{FSM}	Peak Forward Surge Current, 8.3ms single half sine-wave	200	A
T_J	Operating Junction Temperature	-55~+175	°C
T_{STG}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C, unless otherwise specified)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_F	Forward Voltage	$I_F = 15A$ Ta=25°C		2.80	3.30	V
		$I_F = 15A$ Ta=125°C		2.10	2.80	V
V_R	Reverse Breakdown Voltage	$I_R = 100\mu A$	1200			V
I_R	Reverse Leakage Current	$V_R = 1200V$ Ta=25°C			10	μA
		$V_R = 1200V$ Ta=125°C			100	μA
T_{rr}	Reverse Recovery Time	$I_F = 0.5A, I_R = 1A$ $I_{rr} = 0.25A$		35	50	ns
		$I_F = 1A, V_R = 30V$ $di/dt = -200A/\mu s$		28		ns

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Typical Forward Current Derating Curve

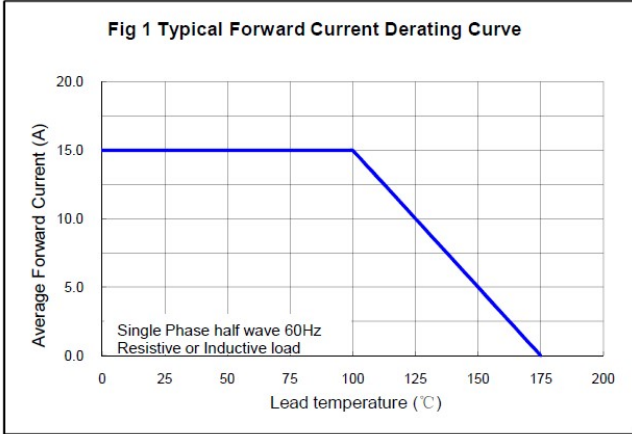


Fig 2 Max. Non-repetitive Forward Surge Current

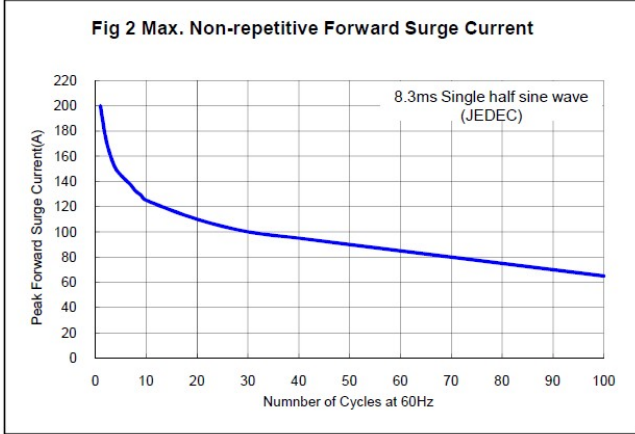


Fig 3 Typical Instantaneous Forward Characteristics

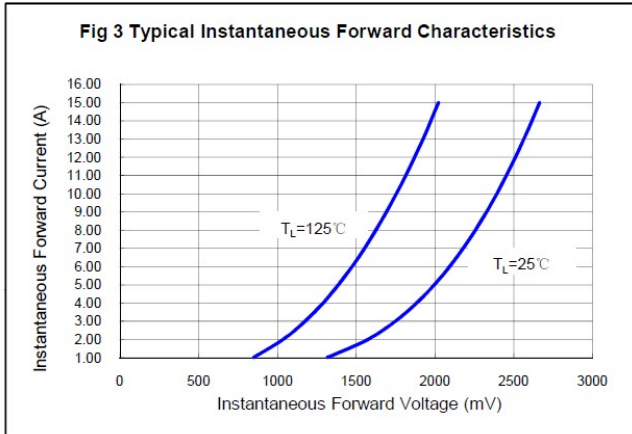
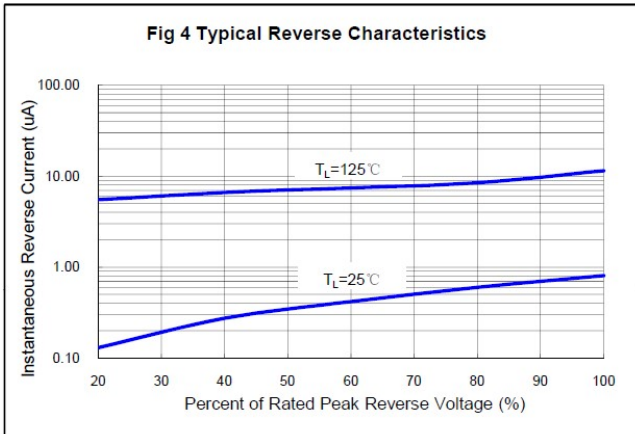
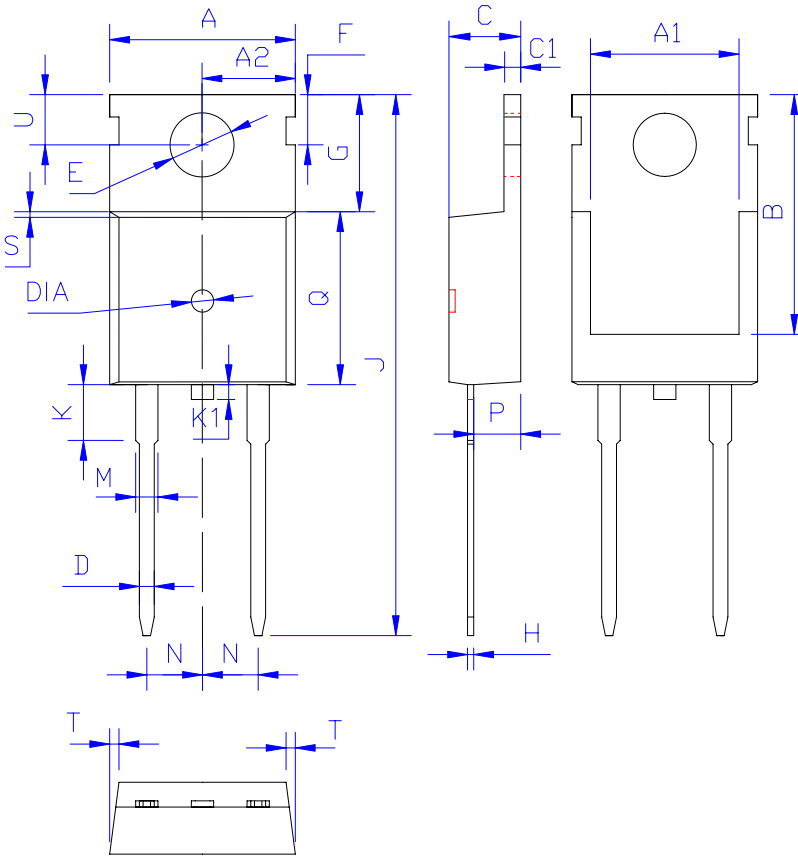


Fig 4 Typical Reverse Characteristics



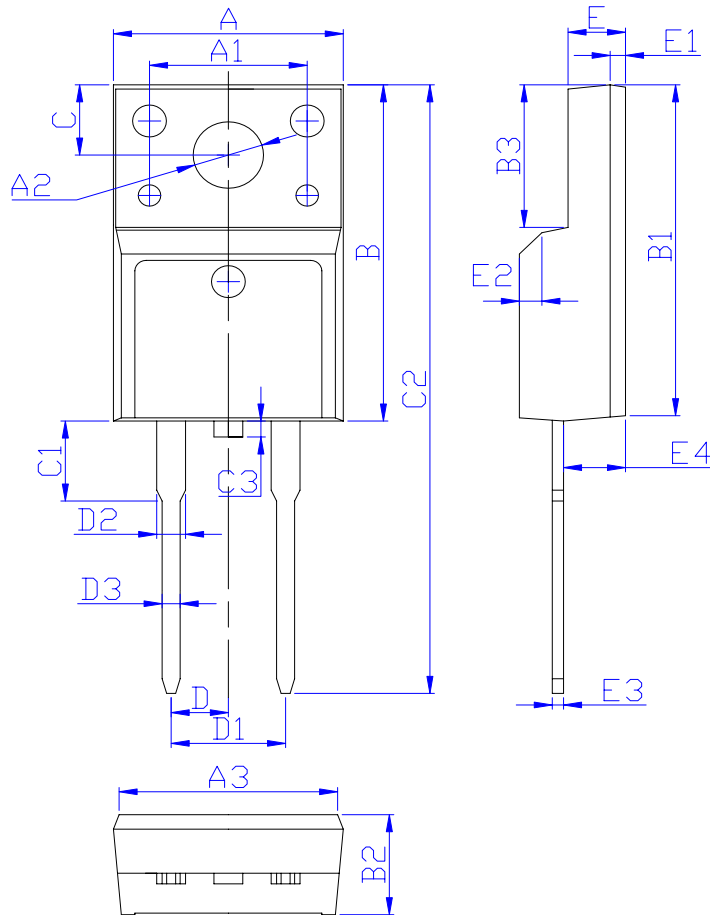
TO-220AC PACKAGE OUTLINE DIMENSIONS



DIM	MILLIMETERS
A	10.00±0.30
A1	8.00±0.30
A2	5.00±0.30
B	13.20±0.40
C	4.50±0.20
C1	1.30±0.20
D	0.80±0.20
E	3.60±0.20
F	3.00±0.30
G	6.60±0.40
H	0.50±0.20
J	28.88±0.50
K	3.00±0.30
K1	1.5±0.30
M	1.30±0.30
N	Typical 2.54
P	2.40±0.40
Q	9.20±0.40
S	0.25±0.15
T	0.25±0.15
U	2.80±0.30
DIA	Φ1.50±0.10 Depth 0.05~0.45

(Unit: mm)

TO-220FAC PACKAGE OUTLINE DIMENSIONS



DIM	MILLIMETERS
A	10.16 \pm 0.30
A1	7.00 \pm 0.20
A2	3.12 \pm 0.20
A3	9.70 \pm 0.30
B	15.90 \pm 0.50
B1	15.60 \pm 0.50
B2	4.70 \pm 0.30
B3	6.70 \pm 0.30
C	3.30 \pm 0.25
C1	3.25 \pm 0.30
C2	28.70 \pm 0.50
C3	1.6 (MAX)
D	2.54 \pm 0.20
D1	5.08 \pm 0.20
D2	1.47 (MAX)
D3	0.80 \pm 0.20
E	2.55 \pm 0.25
E1	0.70 \pm 0.25
E2	1.00 \times 45°
E3	0.50 \pm 0.20
E4	2.75 \pm 0.30

(Unit: mm)