

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: TO-220AC, TO-220FAC, TO-263 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: HFD15S60, HFD15S60F, HFD15S60D2
- ✧ Package: TO-220AC, TO-220FAC, TO-263
- ✧ Marking: As marked
- ✧ Material: RoHS compliant
- ✧ Packing: Tube or Taping
- ✧ Minimum Packing Quantity: 1,000pcs/box or 800pcs/reel

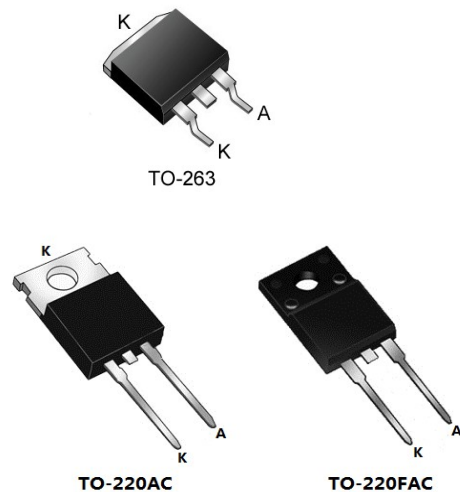
APPLICATIONS

- ✧ 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	600	V
$I_{F(AV)}$	Average Forward Current	15	A
I_{FSM}	Peak Forward Surge Current, 8.3ms single half sine-wave	150	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	$I_F = 15A$ $T_a=25^\circ C$		1.90	2.30	V
		$I_F = 15A$ $T_a=125^\circ C$		1.45	1.65	V
V_R	Reverse Breakdown Voltage	$I_R = 50\mu A$	600			V
I_R	Reverse Leakage Current	$V_R = 600V$ $T_a=25^\circ C$			10	μA
		$V_R = 600V$ $T_a=125^\circ C$			100	μA
T_{rr}	Reverse Recovery Time	$I_F = 0.5A, I_R = 1A$ $I_{rr} = 0.25A$		18	25	ns
		$I_F = 1A, V_R = 30V$ $di/dt = -200A/\mu s$		21		ns



ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Typical Forward Current Derating Curve

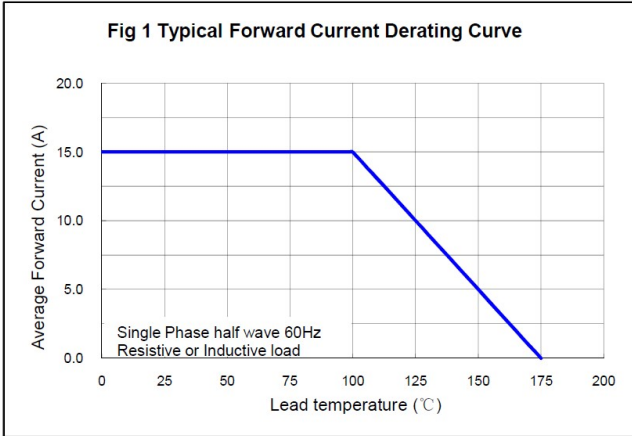


Fig 2 Max. Non-repetitive Forward Surge Current

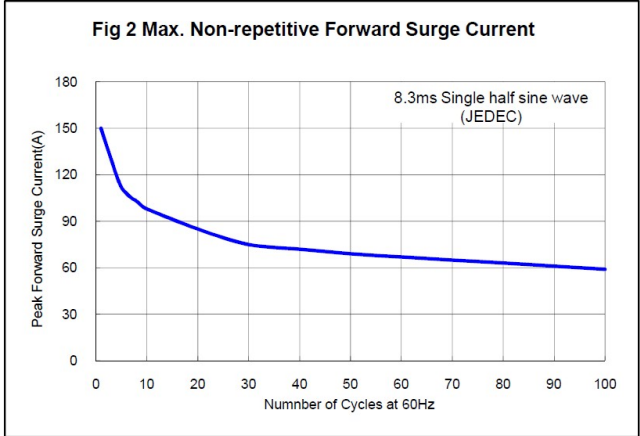


Fig 3 Typical Instantaneous Forward Characteristics

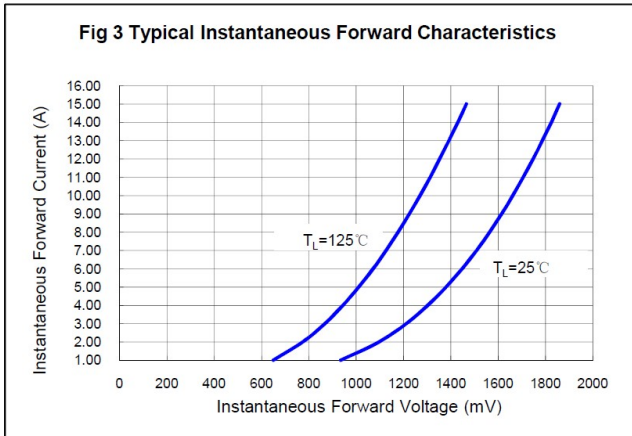
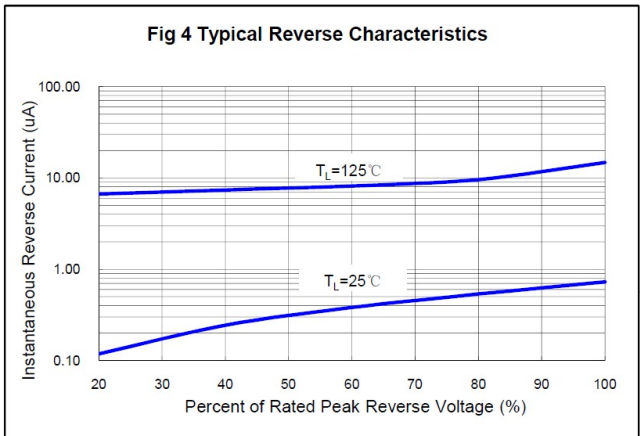
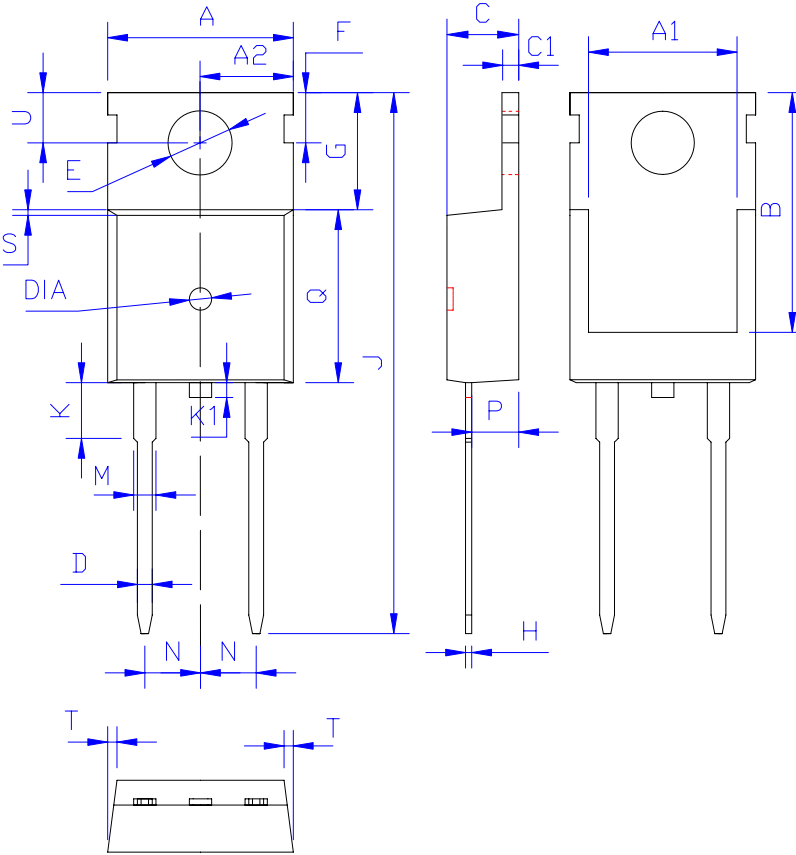


Fig 4 Typical Reverse Characteristics





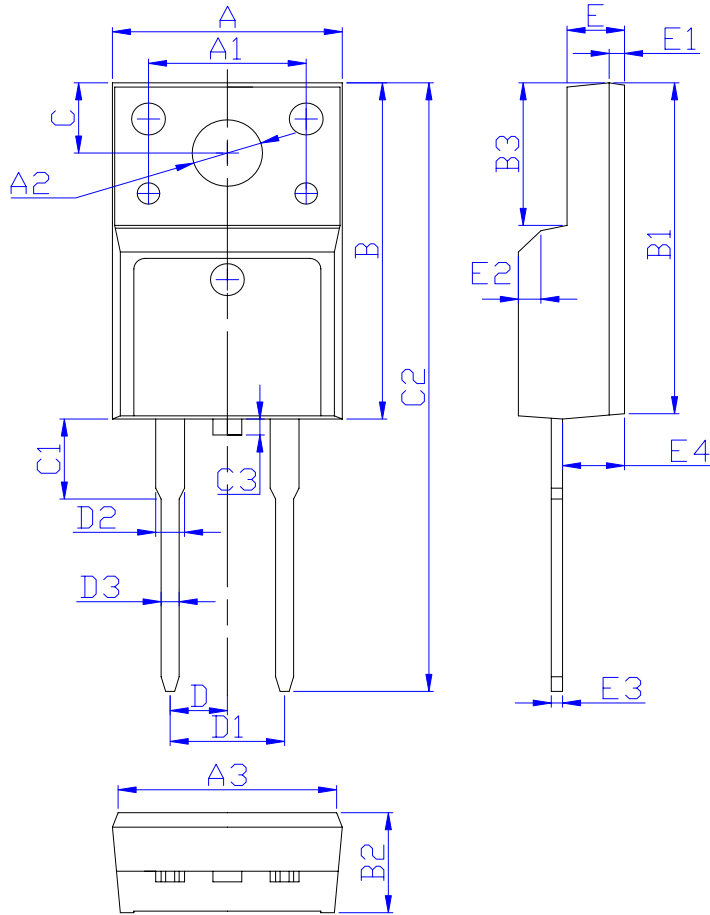
TO-220AC PACKAGE OUTLINE DIMENSIONS



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

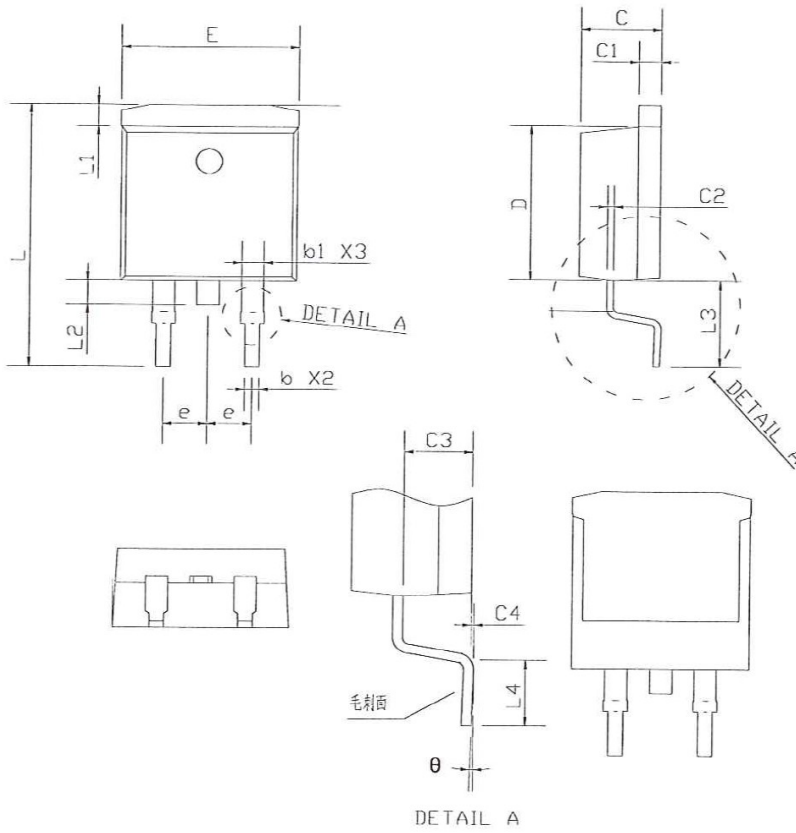


TO-220FAC PACKAGE OUTLINE DIMENSIONS



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

TO-263 PACKAGE OUTLINE DIMENSIONS



DIM	MILLIMETERS	
	MIN	MAX
E	9.80	10.50
L	14.60	15.80
L1	1.00	1.55
L2	1.30	1.70
L3	4.50	5.50
L4	2.10	2.90
b	0.60	0.99
b1	1.00	1.50
C	4.30	4.80
C1	1.10	1.45
C2	0.25	0.52
C3	2.40	1.80
C4		0.25
D	8.50	9.50
θ	0°	8°
e	Typical 2.54	