SEMICONDUCTOR

MURS1570 MURFS1570 MURS1570D2

POLYIMIDE PASSIVATED SUPER FAST RECTIFIER

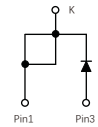
Reverse Voltage - 700 Volts
Forward Current - 15.0Amperes

FEATURES

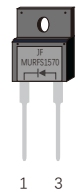
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Ultrafast Recovery Characteristics
- Low forward voltage drop
- Low Reverse Leakage Current
- Soft Recovery Characteristics
- High temperature soldering guaranteed:260°C/10 seconds,
- 0.25"(6.35mm)from case
- Component in accordance to RoHS 2015/863/EU

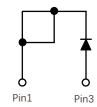
Pb RoHS COMPLIANT

TO-220AC

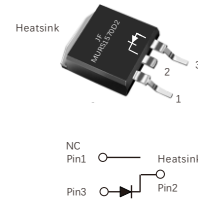


ITO-220AC





TO-263



MECHANICAL DATA

- Case: JEDEC TO-220AC ITO-220AC TO-263 molded plastic body
- Terminals: Lead solderable per MIL-STD-750,method 2026
- Polarity: As marked
- Mounting Position: Any

TYPICAL APPLICATIONS

- Anti-Parallel Diode
  - -Switching Power Supply
  - -Inverters
- Free wheeling Diode
  - -Motor Controller
  - -Converters
  - -Inverters
- PFC
- Snubber,Clamp diode

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	15.0A
V_R	700V
I_{FSM}	150A
V_F at I_F=15.0A,125℃	1.40V
Trr typ	27ns
T_{JMAX}	175℃
Diode variation	Sigle die

MAXIMUM RATINGS

(Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	700	V
Maximum average forward rectified current	$I_{F(AV)}$	15.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated T_L)	I_{FSM}	150	A
Operating junction temperature range	T_J	-55 to+175	℃
Storage temperature range	T_{stg}	-55 to+175	℃

ELECTRICAL CHARACTERISTCS (TJ=25℃ Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	I_R=200μA		VBR VR	700	-	-	V
Instaneous forward voltage	T_J=25℃	I_F=15.0A	V_F 1)	-	1.70	2.50	V
	T_J=125℃	I_F=15.0A		-	1.40	-	
Reverse current	T_J=25℃	V_R=700V	I_R 2)	-	-	5.0	μA
	T_J=100℃			-	-	50	μA
	T_J=125℃			-	-	100	
Junction capacitance	4V,1MHz		C_J	-	100	-	pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle
2.Pulse test: pulse width≤40ms

DYNAMIC RECOVERY CHARACTERISTCS (TJ=25℃)

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	I_F=0.5A,I_R=1A,I_{RR}=0.25A	trr	-	-	30	ns
Reverse recovery time	I_F=1.0A,di/dt=200A/μS,V_R=30V		-	18	-	

THERMAL CHARACTERISTCS

Parameter	Symbol	TO-220AC	ITO-220AC	TO-263	Unit
Typical thermal resistance 3)	RθJC	1.3	3.2	1.3	℃/W

3.Thermal resistance from junction to case

AVAILABALE PACK INFORMATION

Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Tube Length (mm)	Inner Box Number	Tube Number Per A Inner Box	Part Number Per A Tube	Quantity(carton) (K)
MURS1570-TO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5
MURFS1570-ITO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5
MURS1570D2 TO-263	Tube	565×225×170	548×151×37	538	5	20	50	5
Product code	Pack	Carton Size L×W×H(mm)	Inner Box Size L×W×H(mm)	Reel Diameter (mm)	Inner Box Number	Reel Number Per A Inner Box	Part Number Per A Reel	Quantity(carton) (K)
MURS1570D2 TO-263	Reel	364×364×235	330×330×38	φ330	5	1	800	4

FIG.1-FORWARD CURRENT DERATING CURVE

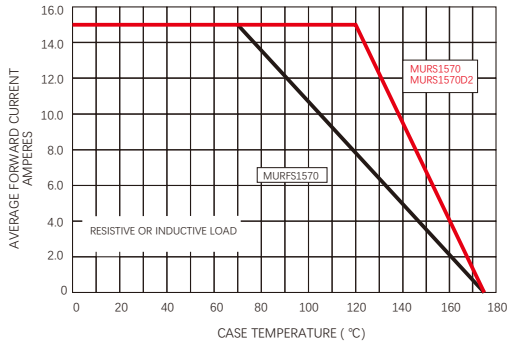


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

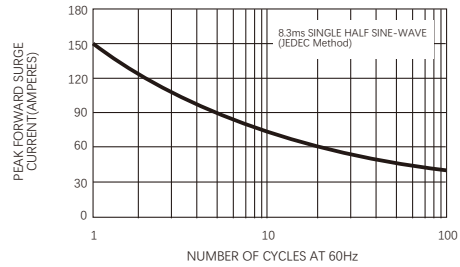


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

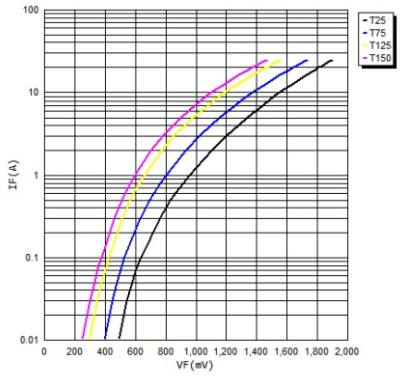


FIG.4-TYPICAL REVERSE CHARACTERISTICS

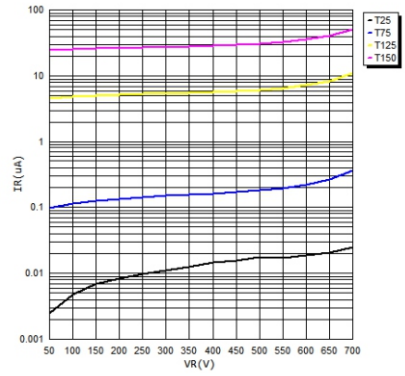
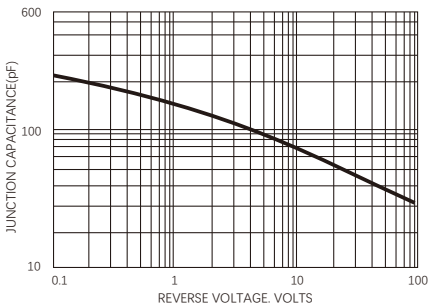
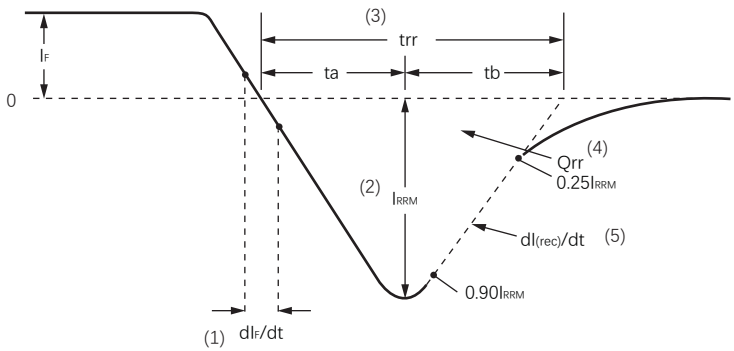


FIG.5-TYPICAL JUNCTION CAPACITANCE





(1) dI_F/dt-rate of change of current through zero crossing

(2) I_{RRM}-peak reverse recovery current

(3) trr- reverse recovery time measured from zero crossing point of negative going IF to point where a line passing through $0.90I_{RRM}$ and $0.25I_{RRM}$ extrapolated to zero current

(4) Qrr- aera under curve defined by trr and IRRM

$$Qrr = \frac{t_{rr} \times I_{RRM}}{2}$$

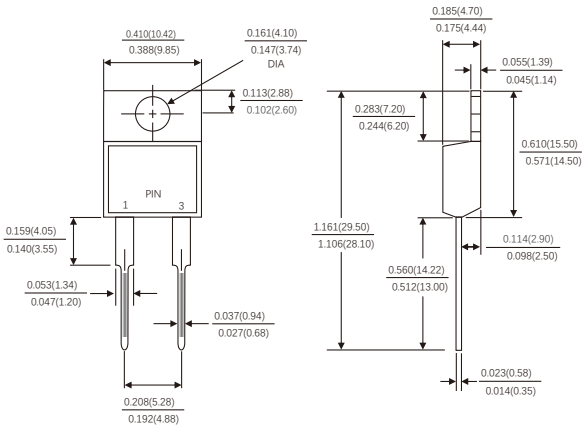
(5)$dI_{(REC)}/d_t$-peak rate of change of current during tb portion of trr

Fig.6 - Reverse Recovery Waveform and Definitions

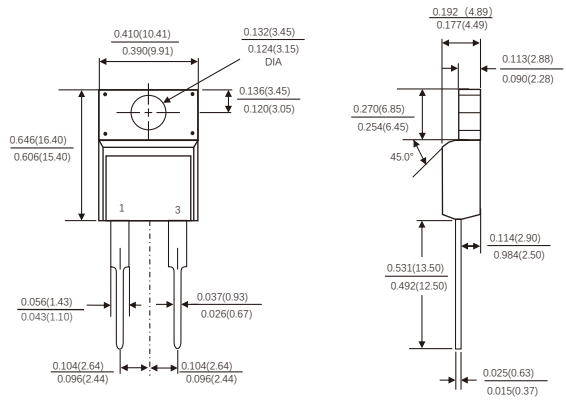
PACKAGE OUTLINE DIMENSIONS

Dimensions in inches and (millimeters)

TO-220AC



ITO-220AC



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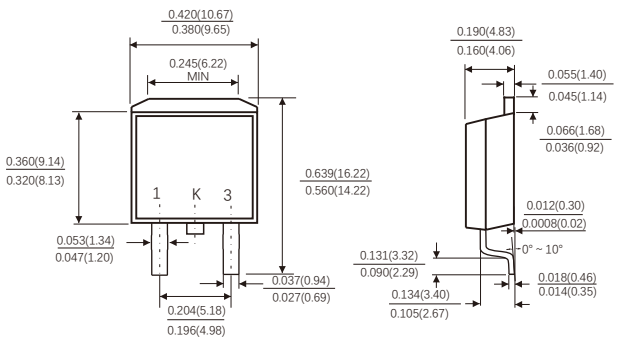
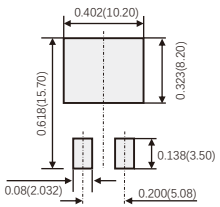


Suggested Pad Layout

(TO-263)



（对于TO263，设计者可参考推荐值根据焊接工艺要求自行确定适合的焊盘尺寸）
(For TO-263，Designers can refer to the recommended values according to the manufacturing process requirements to determine the appropriate pad size)

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