

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- Low forward voltage drop
- Single rectifier construction
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds,
- Component in accordance to RoHS 2015/863/EU

Mechanical Data

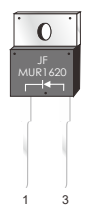
- Case: JEDEC TO-220AC, ITO-220AC, TO-263 molded plastic body
- Terminals: Solderable per MIL-STD-202, method 208
- Polarity: As marked
- Mounting Position: Any

Typical Applications

- For use in boost stage in SMPS
- High frequency inverters for solar inverters
- DC/DC converters
- High frequency output rectification of battery chargers
- Free wheeling diodes in motor drivers

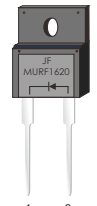
TO-220AC

MUR1620



ITO-220AC

MURF1620



TO-263

MUR1620D2



Primary Characteristics	
$I_F(AV)$	16A
V_{RRM}	200V
I_{FSM}	150A
V_F at $I_F=16A(125^\circ C)$	1.00V
$I_R(Max)$	2 μ A
$T_J(Max)$	175 $^\circ C$
Package	TO-220AC, ITO-220AC, TO-263

Maximum Ratings And Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified ,Single phase ,half wave ,resistive or inductive load. For capacitive load, derate by 20%.)

Parameters	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum average forward rectified current	$I_F(AV)$	16	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method, Total device)	I_{FSM}	150	A
Rating for fusing($t < 8.3ms$)	I^2t	93.375	A 2 S
Operating junction temperature range	T_J	-55 to 175	$^\circ C$
Storage temperature range	T_{stg}	-55 to 175	$^\circ C$

RATINGS AND CHARACTERISTICS OF MUR1620, MURF1620, MUR1620D2

Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless Otherwise Noted)

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units	
Breakdown voltage Blocking voltage	$I_R=200\mu\text{A}$	V_{BR} V_R	200	-	-	V	
Instaneous forward voltage	$T_J=25^\circ\text{C}$	$I_F=5.0\text{A}$	-	0.88	-	V	
		$I_F=10\text{A}$	-	1.00	-		
		$I_F=16\text{A}$	-	1.11	1.30		
	$T_J=125^\circ\text{C}$	$I_F=5.0\text{A}$	-	0.74	-		
		$I_F=10\text{A}$	-	0.88	-		
		$I_F=16\text{A}$	-	1.00	-		
Reverse current	$T_J=25^\circ\text{C}$	$V_R=200\text{V}$	$I_R^{2)}$	-	-	2.0	μA
	$T_J=100^\circ\text{C}$			-	-	10	μA
	$T_J=125^\circ\text{C}$			-	-	20	
Junction capacitance	4V,1MHz	C_J	-	113	-	pF	

Notes: 1.Pulse Test:300 μs pulse width,1% duty cycle

2.Pulse test:pulse width \leq 40ms

Dynamic Recovery Characteristics ($t_j=25^\circ\text{C}$)

Parameters	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse recovery time	$I_F=0.5\text{A}, I_R=1\text{A}, I_{RR}=0.25\text{A}$	trr	-	25	35	ns

RATINGS AND CHARACTERISTICS OF MUR1620, MURF1620, MUR1620D2

Thermal Characteristics

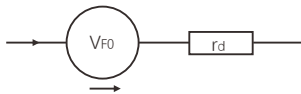
Parameter	Symbol	TO-220AC	ITO-220AC	TO-263	Unit
Typical thermal resistance ³⁾	R _{θjc}	1.0	2.5	1.0	°C/W

3. Thermal resistance from junction to case

Available Pack Information

Product code	Pack	Box Size L×W×H (mm)	Quantity (pcs/box)	Carton Size L×W×H (mm)	Quantity (box/carton)
MUR1620-TO-220AC	P/T	558×148×38	1000	565×225×170	5
MURF1620-ITO-220AC	P/T	558×148×38	1000	565×225×170	5
MUR1620D2-TO-263	P/T	558×148×38	1000	565×225×170	5

Equivalent circuits for forward power loss calculation



V_{f0}: threshold voltage 0.83V

r_d: Dynamic resistance 0.019Ω

Forward power loss of diode = $V_{f0} \times I_{F(AV)} + r_d \times I_{F(RMS)}^2$

Fig.1-Forward Current Derating Curve

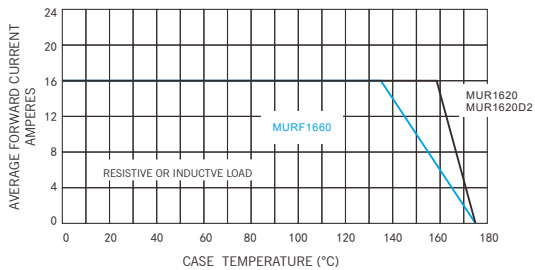
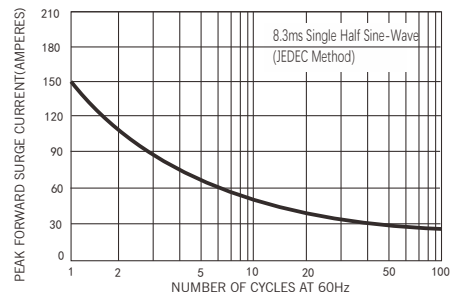


Fig.2-Maximum Non-repetitive Peak Forward Surge Current



RATINGS AND CHARACTERISTICS OF MUR1620, MURF1620, MUR1620D2

Fig.3-Typical Instantaneous Forward Characteristics

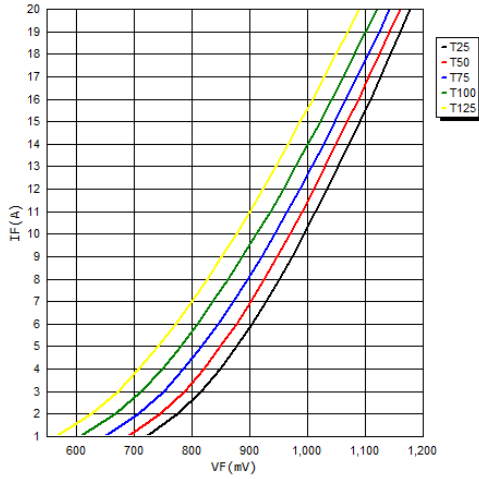


Fig.4-Typical Reverse Characteristics

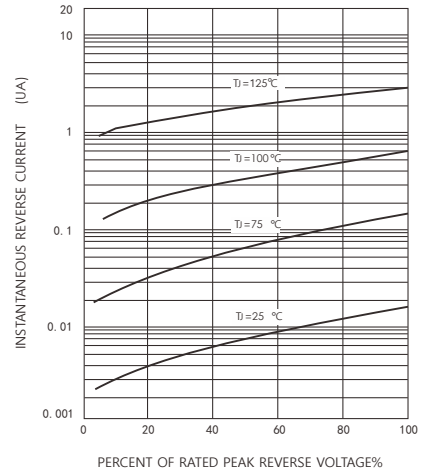
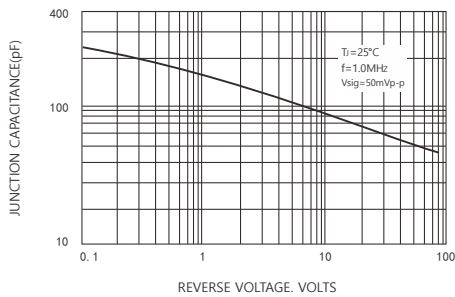
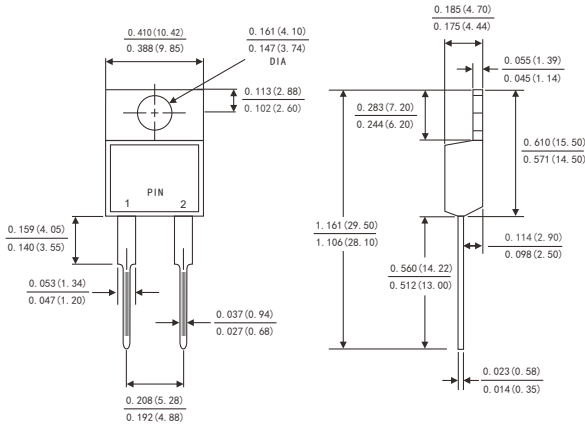


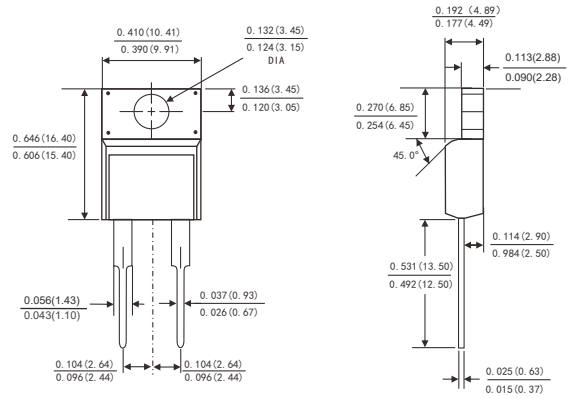
Fig.5-Typical Junction Capacitance



TO-220AC

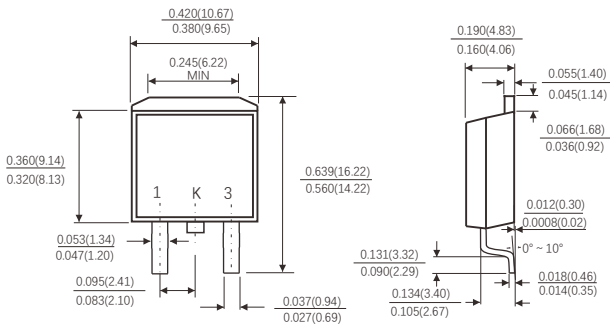


ITO-220AC

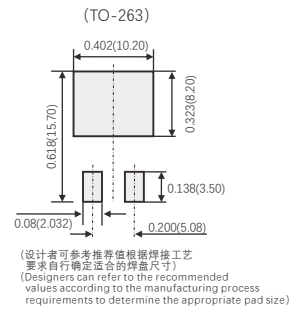


Dimensions in inches and (millimeters)

TO-263
D2PAK



Suggested Pad Layout



Dimensions in inches and (millimeters)

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