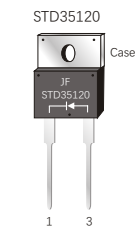


Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated Chip
- Low VF, Low power loss
- Flexible solution for reliable AC power rectification
- High surge capability
- High temperature soldering guaranteed: 260°C/10s at terminals
- Component in accordance to RoHS 2015/863/EU



TO-220AC



Mechanical Data

- Case: JEDEC TO-220AC
- Molding compound meets UL94V-0 flammability rating
- Terminals: Lead solderable per J-STD-002 and JESD22-B102
- Polarity: As marked
- Mounting Torque: 10 in-lbs maximum

Typical Applications

- Input Rectification
- Bypass Diode
- Polarity Reverse Protection
- EV / HEV Battery Chargers

Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	1200	V
Maximum average forward rectified current, D=0.5, T _c =118°C (see fig.1)	I _{F(AV)}	35	A
Surge non repetitive forward current tp=10ms sinusoidal	I _{FSM}	435	A
Maximum operating junction temperature	T _J	150	°C
Storage temperature range	T _{stg}	-55 to +150	°C

PRIMARY CHARACTERISTICS	
I _{F(AV)}	35A
V _{RRM}	1200V
I _{FSM}	435A
V _F at I _F =35.0A(150°C)	1.00V
I _R	2μA
T _J (MAX)	150°C
Circuit configuration	Single

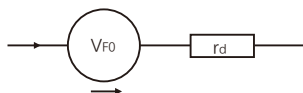
Electrical Characteristics (T_A=25°C Unless otherwise noted)

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Unit
Breakdown voltage Blocking voltage	I _r =10μA		V _{BR} V _R	1200	-	-	V
Instaneous forward voltage	T _J =25°C	IF=5A	V _F 1)	-	0.87	-	V
		IF=25A		-	1.02	-	
		IF=35A		-	1.08	1.20	
	T _J =150°C	IF=5A		-	0.71	-	
		IF=25A		-	0.92	-	
		IF=35A		-	1.00	-	
Reverse current	T _J =25°C	V _R =1200V	I _R 2)	-	-	2.0	μA
	T _J =125°C			-	-	200	μA
	T _J =150°C			-	-	800	
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

Equivalent circuits for forward power loss calculation



V_{F0}: threshold voltage 0.90V

r_d: Dynamic resistance 0.008Ω

Forward power loss of diode=V_{F0}×I_{F(AV)}+r_d×I_{F(RMS)}²

Thermal Characteristics

Parameter	Symbol	STD35120	Unit
Typical thermal resistance Junction to case	$R_{\theta JC}$	0.9	°C/W
Typical thermal resistance 3) Junction to ambient	$R_{\theta JA}$	62	

3)When mounted on 1" square (650 mm²) PCB of FR-4

Available 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)
STD35120-TO-220AC	Tube	565×225×170	548×151×37	540	5	20	50	5

FIG.1-Conduction losses versus average current

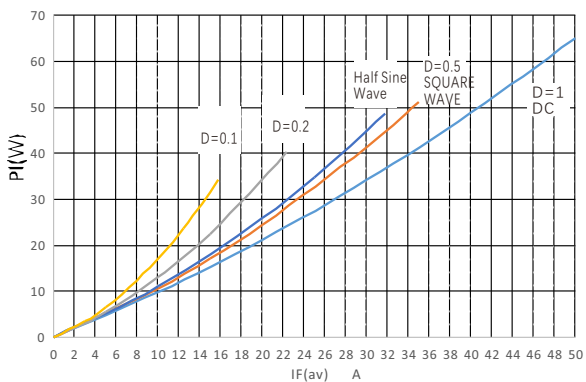


FIG.2-Relative variation of thermal impedance Junction to case versus pulse duration

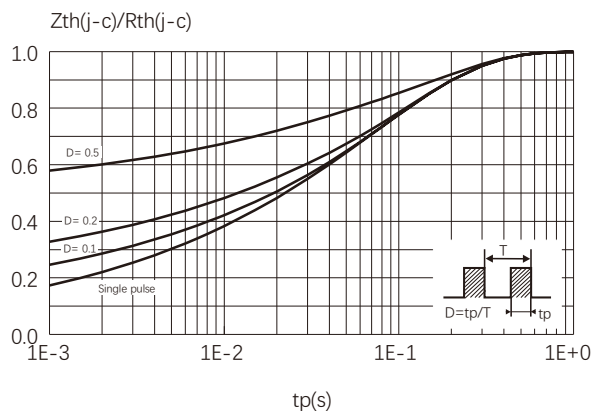


Fig.3-Forward Current Derating Curve

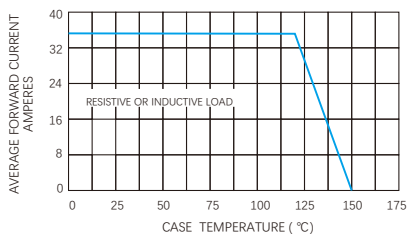


Fig.4-Maximum Non-repetitive Peak Forward Surge Current

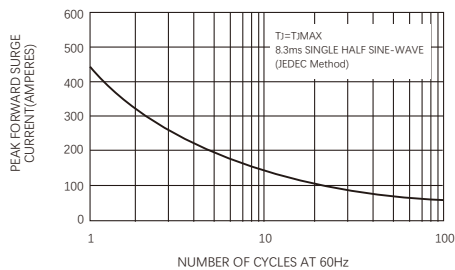


Fig.5-Typical Instantaneous Forward Characteristics

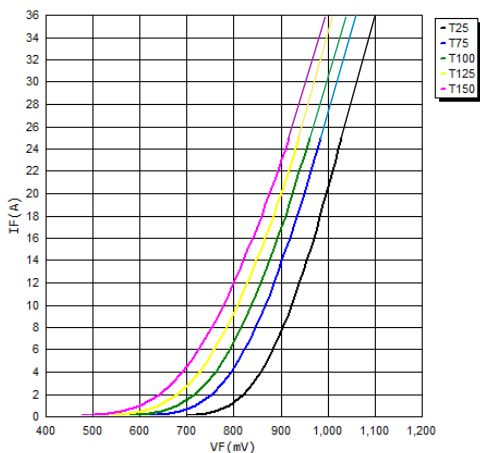


Fig.6-Typical Reverse Characteristics

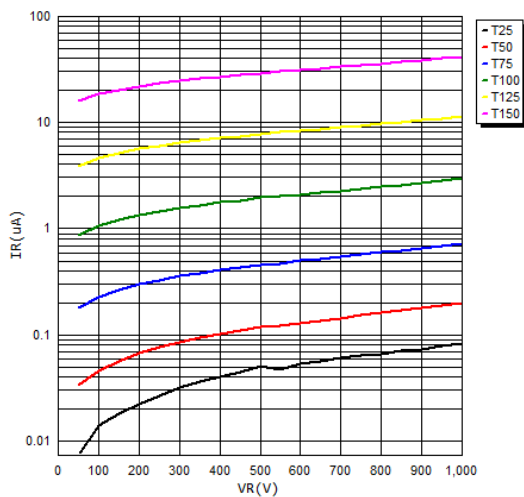
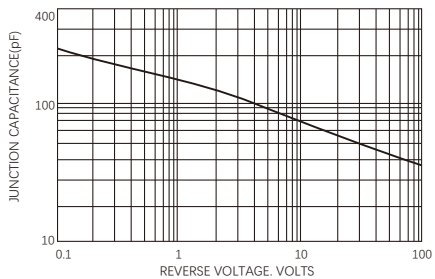
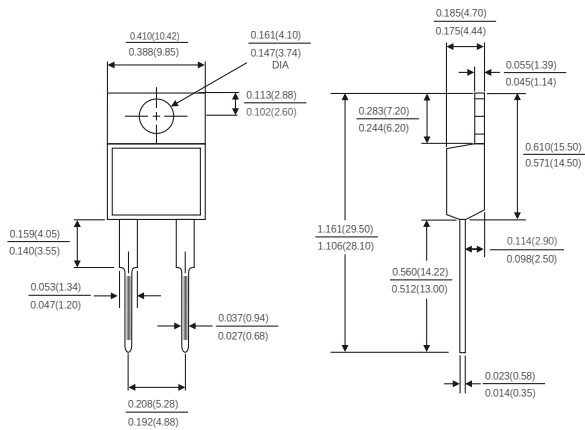


Fig.7-Typical Junction Capacitance



TO-220AC



Dimensions in inches and (millimeters)

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