



TO-247-3L Plastic-Encapsulate Diodes

Ultra Fast Recovery Rectifiers

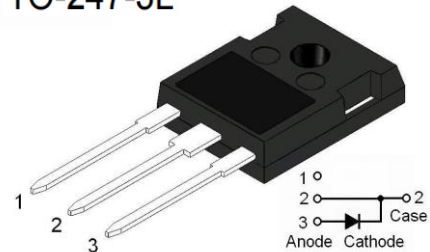
Application

- Snubber diode
- Switch power supply
- UPS
- Antiparalle diode for high frequency switching devices

Features

- Ultrafast recovery time
- Low recovery Loss
- Low forward voltage
- Low leakage current

TO-247-3L



Absolute Maximum Rating (Ta=25°C)

Rating	Symbol	Test conditions	Value	Unit
Peak repetitive reverse voltage	V_{RRM}		650	V
Working peak reverse voltage	V_{RSM}		650	V
Average rectified output current	$I_{F(AV)}$		75	A
Non-repetitive peak forward surge current	I_{FSM}	t=8.3ms half sine wave	650	A
Junction temperature	T_j		150	°C
Storage temperature	T_{stg}		-55 ~ +150	°C

Thermal characteristics

Rating		Symbol	Max.	Unit
Maximum thermal resistance	Junction to case	$R_{\theta JC}$	0.45	°C/W
	Junction to ambient	$R_{\theta JA}$	35	

Electrical Characteristics

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Forward voltage	V_F	$I_F = 75\text{ A}$	$T_j = 25^\circ\text{C}$			1.65	V
			$T_j = 125^\circ\text{C}$			1.50	
Reverse current	I_R	$V_R = 650\text{V}$	$T_j = 25^\circ\text{C}$			100	μA
			$T_j = 125^\circ\text{C}$			10	mA
Reverse recovery time	t_{rr}	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{rr} = 0.25\text{A}$				80	ns

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Typical Characteristics

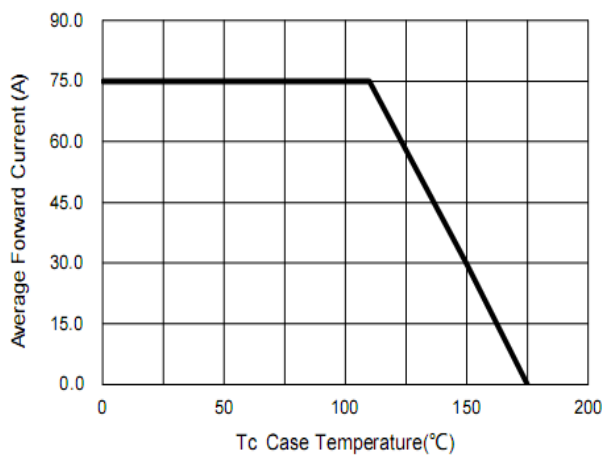


Figure 1. Forward Current Derating Curve

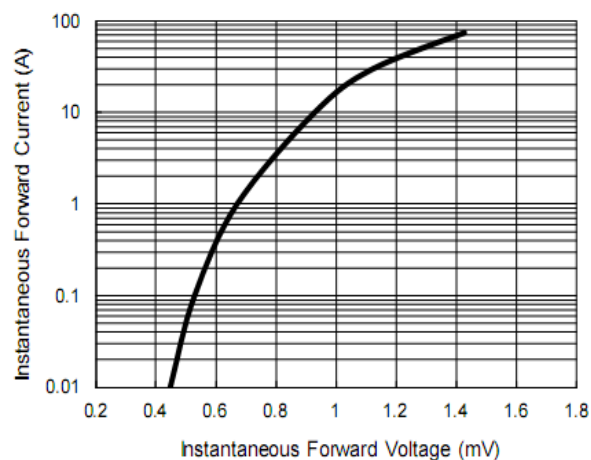


Figure 2. Typical Forward Characteristics

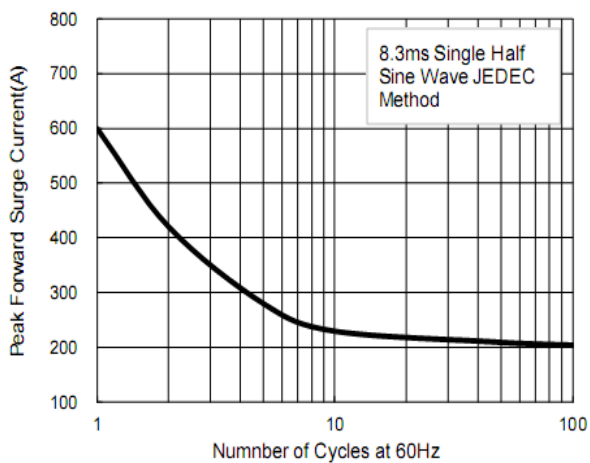


Figure 3. Forward Surge Current Capability

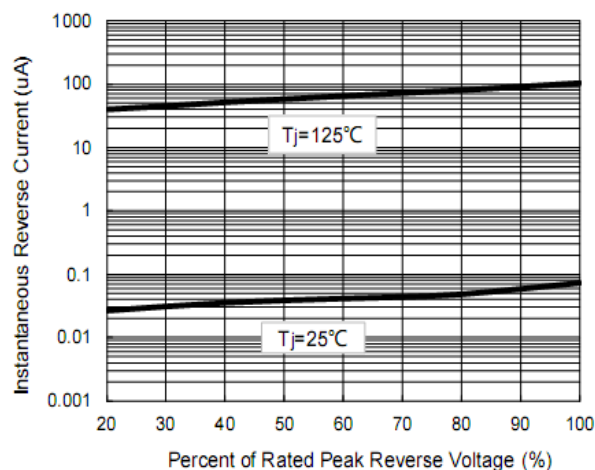


Figure 4. Typical Reverse Characteristics

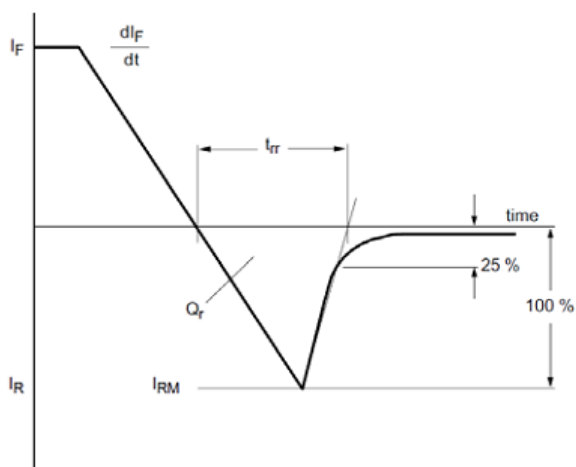
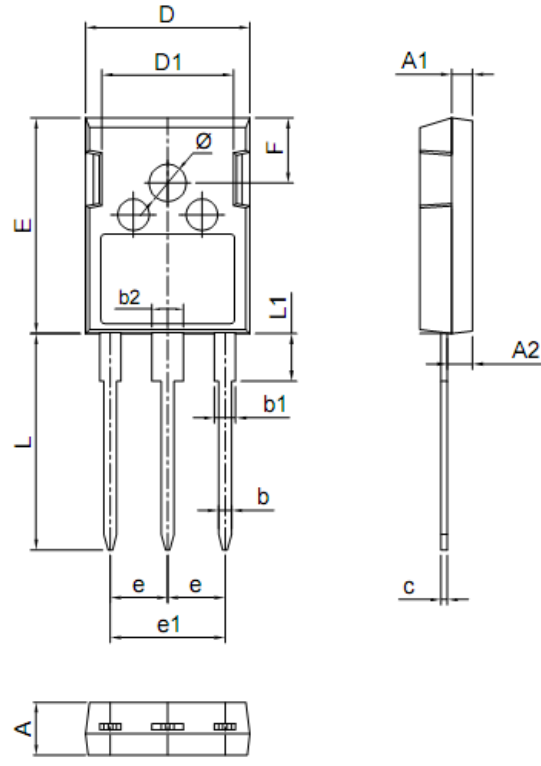


Figure 5. Reverse recovery definitions; ramp recovery

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Package Dimensions

	Dim	Millimeter		Inches	
		Min.	Max.	Min.	Max.
	A	4.90	5.10	0.193	0.201
	A1	1.90	2.10	0.075	0.083
	A2	2.20	2.40	0.087	0.094
	b	1.07	1.33	0.042	0.052
	b1	1.90	2.30	0.075	0.091
	b2	2.90	3.30	0.114	0.130
	c	0.55	0.68	0.022	0.027
	D	15.75	16.05	0.620	0.632
	D1	11.60	12.00	0.457	0.472
	E	20.20	20.80	0.795	0.819
	e	5.45 (BSC)		0.215 (BSC)	
	e1	10.90 (BSC)		0.429 (BSC)	
	F	6.05	6.25	0.238	0.246
	L	20.10	20.40	0.791	0.803
	L1	4.05	4.35	0.159	0.171
	Φ	3.50	3.80	0.138	0.150