

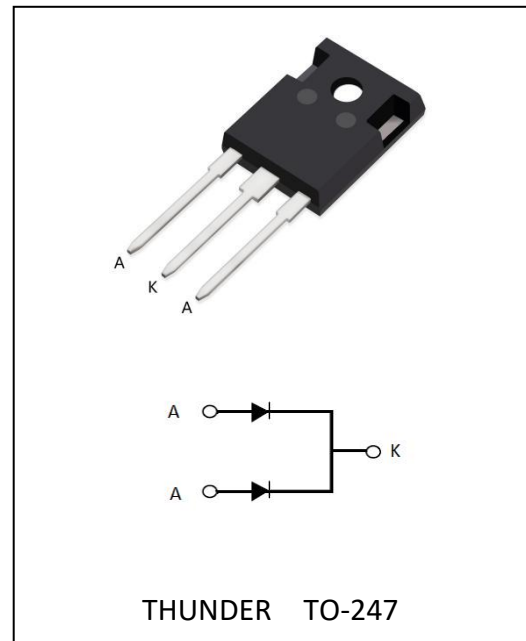
FRED

Ultrafast Soft Recovery Diode, 20A

Features:

- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low power loss, less RFI and EMI
- Low I_R value
- High surge capacity
- Epitaxial chip construction

Product Summary	
V_R	1200 V
$I_{F(AV)}$	2*10A
t_{rr}	25ns



Description/Applications

These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery behavior of the diodes. These devices are ideally suited for applications where the switching losses are not significant portion of the total losses.

Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V_{RRM}		1200	V
Continuous forward current	$I_{F(AV)}$	$T_c = 110^\circ\text{C}$	20	A
Single pulse forward current	I_{FSM}	$T_c = 25^\circ\text{C}$	200	
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHz	10	
Operating junction	T_j		175	$^\circ\text{C}$
Storage temperatures	T_{stg}		-55 to +175	$^\circ\text{C}$

Electrical characteristics (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage Blocking voltage	V_{BR} , V_R	$I_R=100\mu A$	1200			V
Forward voltage (Per Diode)	V_F	$I_F=10A$		2.10	2.70	
		$I_F=10A$, $T_j=125^\circ C$		1.95	2.50	
Reverse leakage current(Per Diode)	I_R	$V_R=V_{RRM}$			20	μA
		$T_j=150^\circ C$, $V_R=1200V$			200	
Reverse recovery time(Per Diode)	t_{rr}	$I_F=0.5A$, $I_R=1A$, $I_{RR}=0.25A$		40	50	ns
		$I_F=1A$, $V_R=30V$, $di/dt=200A/\mu s$		25	35	

Thermal characteristics

Paramter	Symbol	Typ.	Units
Junction-to-Case	$R_{\theta JC}$	0.8	$^\circ C/W$

Electrical performance (typical)

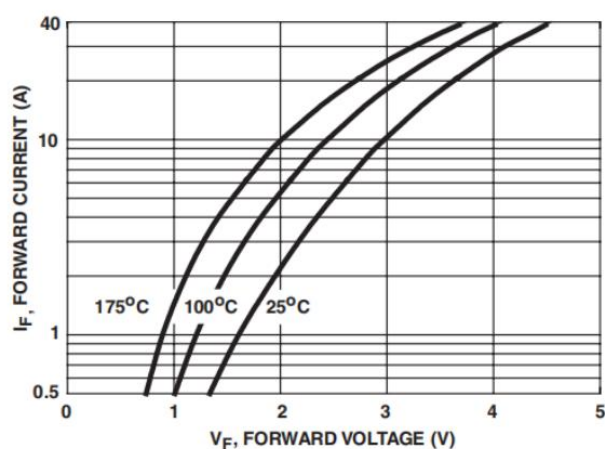


FIGURE 1. FORWARD CURRENT vs FORWARD VOLTAGE

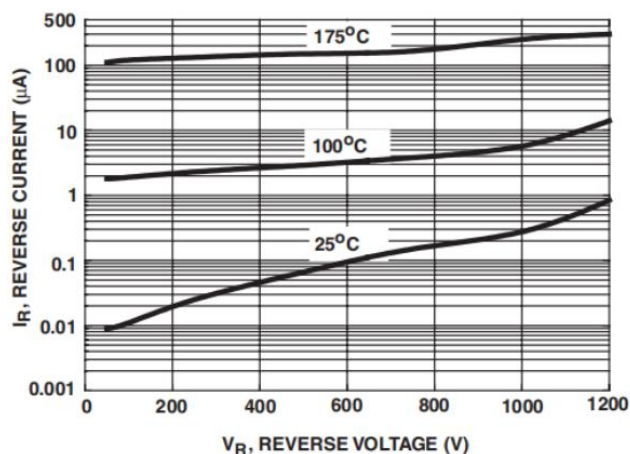


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

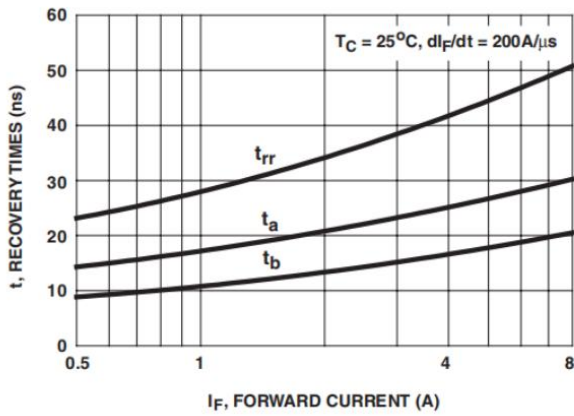


FIGURE 3. t_{rr} , t_a AND t_b CURVES vs FORWARD CURRENT

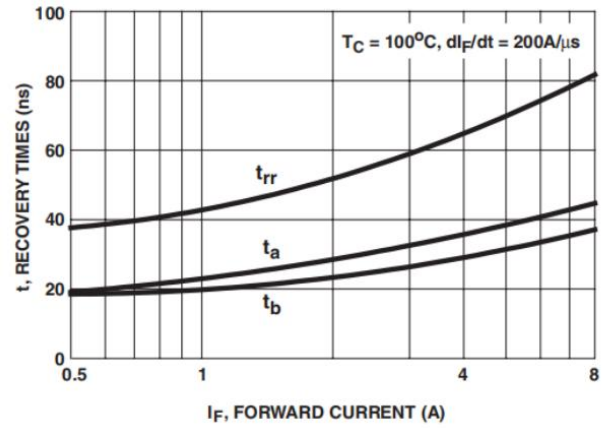


FIGURE 4. t_{rr} , t_a AND t_b CURVES vs FORWARD CURRENT

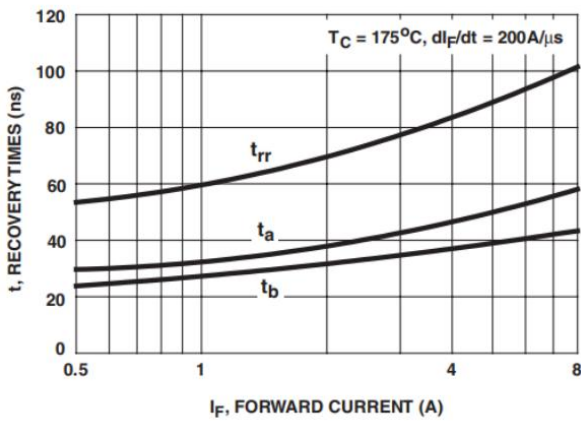


FIGURE 5. t_{rr} , t_a AND t_b CURVES vs FORWARD CURRENT

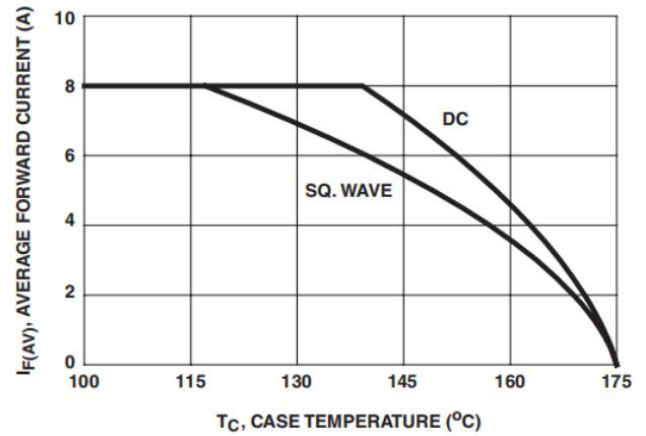


FIGURE 6. CURRENT DERATING CURVE

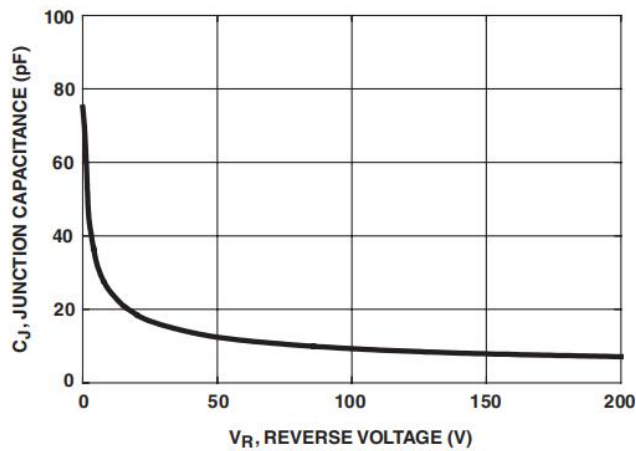
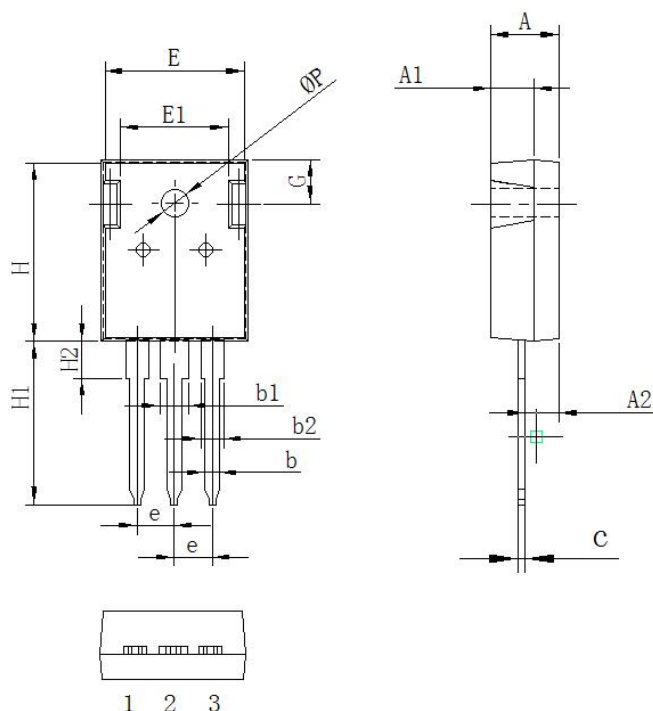


FIGURE 7. JUNCTION CAPACITANCE vs REVERSE VOLTAGE

Package Information

TO-247 PACKAGE

基本尺寸



Symbol	单位 mm		
	Min	Nom	Max
A	4.8	5.00	5.20
A1	3.3	3.5	3.7
A2	2.20	2.40	2.60
b	1.00	1.2	1.40
b1	2.90	3.10	3.30
b2	1.90	2.10	2.30
c	0.50	0.60	0.70
e	5.25	5.45	5.65
E	15.2	15.7	16.2
E1	10.2	10.7	11.2
H	20.8	21	21.2
H1	19.5	20.0	20.5
H2	4.00	4.20	4.40
G	5.60	5.80	6.00
ΦP	3.50	3.70	3.90

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