

## FRED

## Ultrafast Soft Recovery Diode, 200V, 30A×2

**Description:**

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

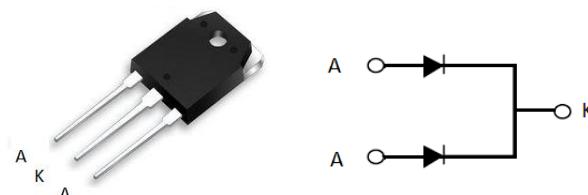
**Features:**

- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

Product Summary	
$V_R$	200 V
$I_{F(AV)}$	2×30 A
$t_{rr}$	35 ns

**Applications:**

- Switched mode power supply
- Inverter welding
- Uninterruptible power supplies (UPS)

**Absolute Maximum Ratings**

Parameter	Symbol	Test Conditions	Values		Units
Repetitive peak reverse voltage	$V_{RRM}$		200		V
Continuous forward current	$I_{F(AV)}$	$T_A=110^\circ C$	60		A
Single pulse forward current	$I_{FSM}$	$T_A=25^\circ C$	360		A
Maximum repetitive forward current	$I_{FRM}$	Square wave, 20kHz	240		A
Operating junction	$T_j$		175		°C
Storage temperatures	$T_{stg}$		-55 to +175		°C

**Electrical characteristics ( $T_a=25^\circ C$  unless otherwise specified)**

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage	$V_{BR}$					V
Blocking voltage	$V_R$	$I_R=100\mu A$	200			
Forward voltage	$V_F$	$I_F=30 A$		0.95	1.20	V
		$I_F=30 A, T_j =125^\circ C$		0.89	1.10	V
Reverse leakage current	$I_R$	$V_R=V_{RRM}$			30	$\mu A$
		$T_j=150^\circ C, V_R=200V$			300	$\mu A$
Reverse recovery time	$t_{rr}$	$I_F=0.5A, I_R=1A, I_{RR}=0.25A$			45	ns
		$I_F=1A, V_R=30V, dI/dt =200A/us$		23	35	ns

**Thermal characteristics**

Parameter	Symbol	Typ	MAX		Units
Junction-to-Case	$R_{thJC}$	-	0.8		°C/W

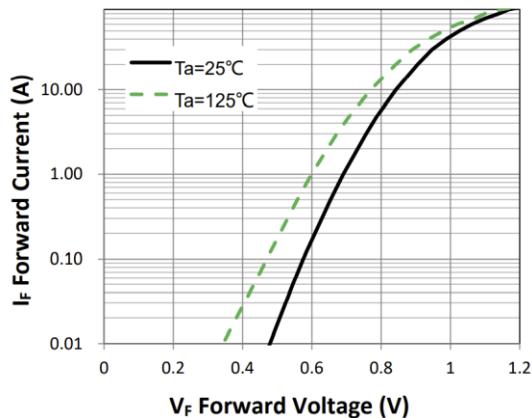


Figure 1. Forward Characteristic(typ.)

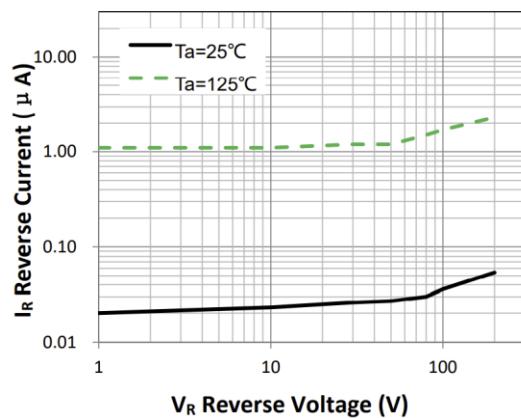


Figure 2. Reverse Characteristic (typ.)

## Package Information

### TO-3PB PACKAGE

Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.60	5.00
A1	1.30	1.70
A2	2.20	2.60
b	0.80	1.20
b1	2.90	3.30
b2	1.90	2.30
c	0.40	0.80
e	5.25	5.65
E	15.3	15.7
E1	13.2	13.6
E2	13.1	13.5
E3	9.10	9.50
H	19.7	20.1
H1	19.1	20.1
H2	18.3	18.7
H3	2.80	3.20
G	4.80	5.20
ΦP	3.00	3.40