

## FRED

### Ultrafast Soft Recovery Diode, 60A/1200V

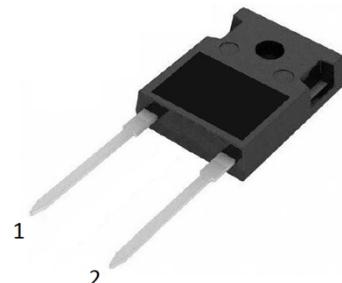
#### Description

These diodes are optimized to low loss 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

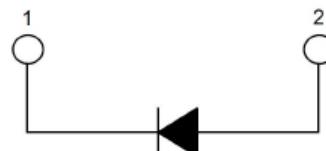
- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

Product Summary	
VR	1200 V
IF(AV)	60A
trr	35ns



#### Application

- Freewheeling diode, snubber diode
- Rectifiers in switched mode power supply
- Uninterruptible power supplies(UPS)



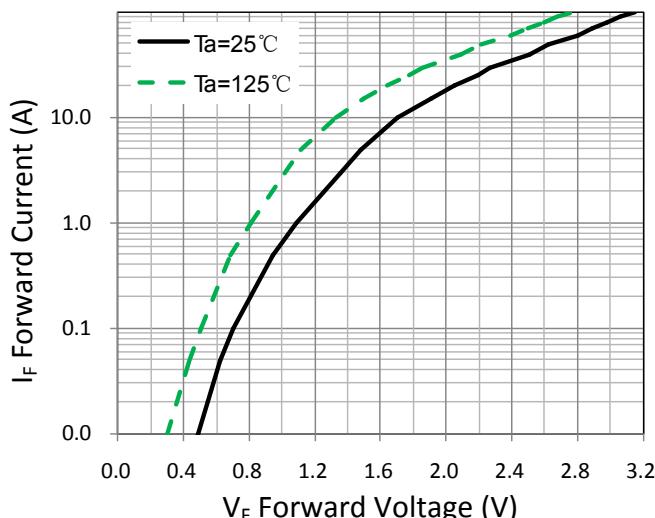
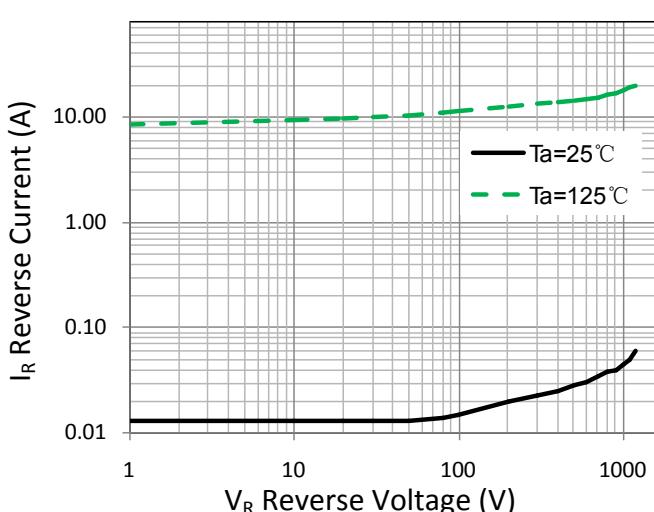
Absolute Maximum Ratings				
Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V <sub>RRM</sub>		1200	V
Continuous forward current	I <sub>F(AV)</sub>	T <sub>C</sub> = 110°C	60	A
Single pulse forward current	I <sub>FSM</sub>	T <sub>C</sub> = 25°C	380	
Maximum repetitive forward current	I <sub>FRM</sub>	Square wave, 20kHz	110	
Operating junction	T <sub>j</sub>		175	°C
Storage temperatures	T <sub>stg</sub>		-55 to +175	°C

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

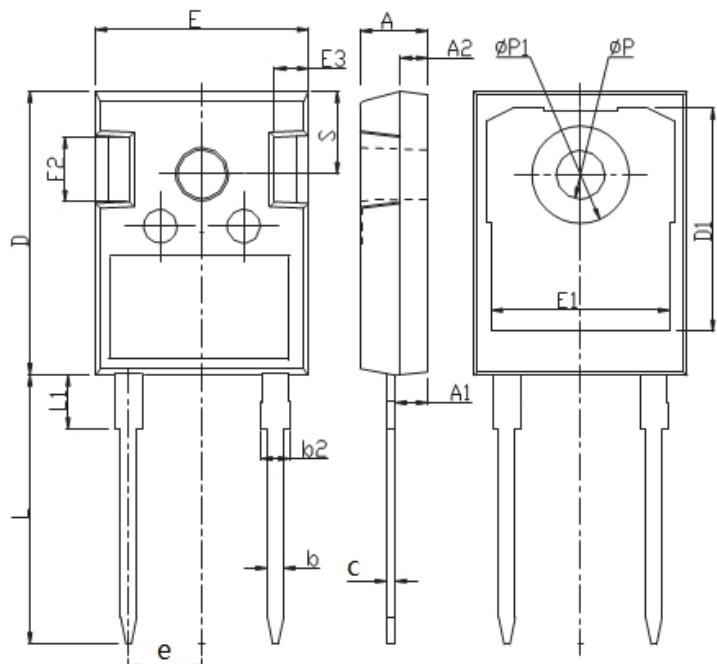
Parameter	Symbol	Test Conditions	Min	Typ.	Max.	Units
Breakdown voltage Blocking voltage	V <sub>BR</sub> , V <sub>R</sub>	I <sub>R</sub> =100μA	1200			V
Forward voltage (Per Diode)	V <sub>F</sub>	I <sub>F</sub> =60 A		2.80	3.30	
		I <sub>F</sub> =60 A, T <sub>j</sub> =125°C		2.40	3.00	
Reverse leakage current(Per Diode)	I <sub>R</sub>	V <sub>R</sub> = 1200V			50	μA
		T <sub>j</sub> =150°C, V <sub>R</sub> =1200V			500	
Reverse recovery time(Per Diode)	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1A, I <sub>RR</sub> =0.25A			80	ns
		I <sub>F</sub> =1A, V <sub>R</sub> =30V, di/dt =200A/us		35	50	

**Thermal characteristics**

Symbol	Parameter	Typ.	Max.	Units
R <sub>θJC</sub>	Junction-to-Case	—	0.70	°C/W

**Typical Characteristics****Figure 1.** Forward Characteristic(typ.)**Figure 2.** Reverse Characteristic (typ.)

### Package Information (TO-247-2 PACKAGE)



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.10	1.30
b2	1.90	2.15
c	0.50	0.75
D	20.70	21.30
D1	16.25	16.85
e	5.25	5.65
E	15.60	16.00
E1	13.06	13.46
E2	4.80	5.20
E3	1.80	2.50
L	19.62	20.22
L1	4.00	4.30
ØP	3.40	3.80
ØP1	7.00	7.30
S	5.95	6.35