

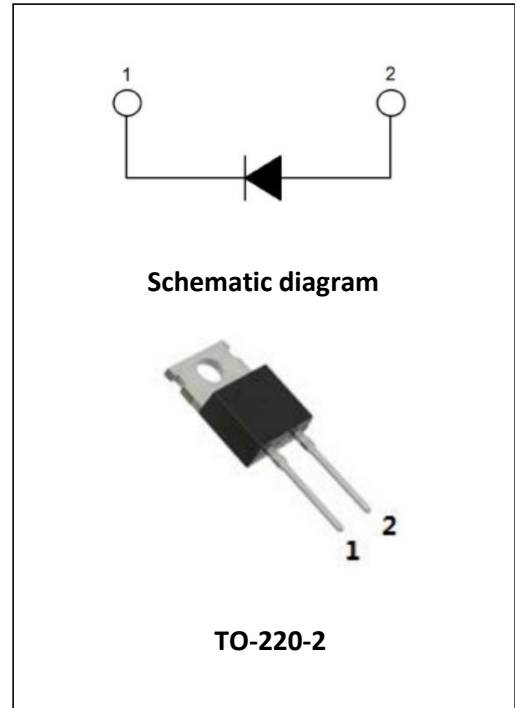
**FRED**  
**Ultrafast Soft Recovery Diode, 600V, 15A**

**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.

**General Features**

- ① Ultrafast Recovery
- ② 175°C operating junction temperature
- ③ High frequency operation
- ④ Low IR value
- ⑤ Very Low forward voltage
- ⑥ Epitaxial chip construction



**Application**

- ① Switched mode power supply
- ② Free wheeling diode, Snubber diode
- ③ UPS

Absolute Maximum Ratings						
Parameter	Symbol	Test Conditions	Values			Units
Repetitive peak reverse voltage	$V_{RRM}$		600			V
Continuous forward current	$I_{F(AV)}$	$T_A=110^{\circ}C$	15			A
Single pulse forward current	$I_{FSM}$	$T_A=25^{\circ}C$	135			A
Maximum repetitive forward current	$I_{FRM}$	Square wave, 20kHz	35			A
Operating junction	$T_j$		175			$^{\circ}C$
Storage temperatures	$T_{stg}$		-55 to +175			$^{\circ}C$
Electrical characteristics ( $T_a=25^{\circ}C$ unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage	$V_{BR}$	$I_R=100\mu A$	600			V
Blocking voltage	$V_R$					
Forward voltage	$V_F$	$I_F=15 A$		1.30	1.60	V
		$I_F=15 A, T_j=125^{\circ}C$		1.20	1.50	V
Reverse leakage current	$I_R$	$V_R=V_{RRM}$			20	$\mu A$
		$T_j=150^{\circ}C, V_R=600V$			200	$\mu A$
Reverse recovery time	$t_{rr}$	$I_F=0.5A, I_R=1A, I_{RR}=0.25A$			35	ns
		$I_F=1A, V_R=30V, di/dt=200A/us$		25	35	ns

Thermal characteristics

Parameter	Symbol	Typ	MAX	Units
Junction-to-Case	$R_{thJC}$	-	2.8	$^{\circ}C/W$

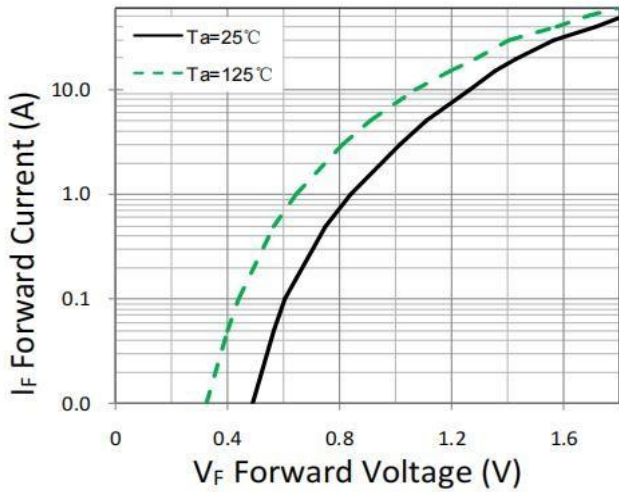


Figure 1. Forward Characteristic(typ.)

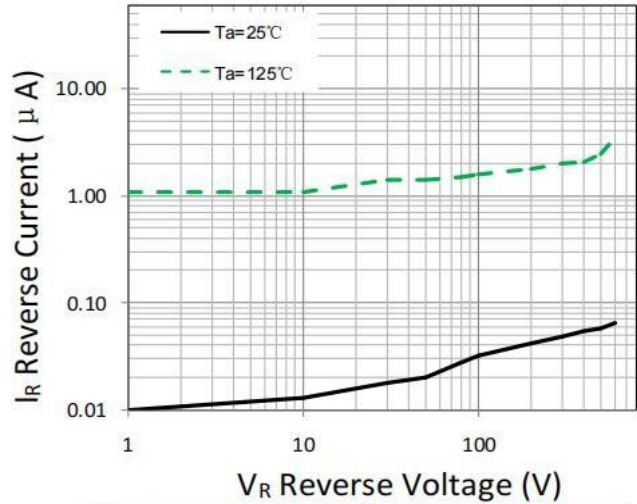
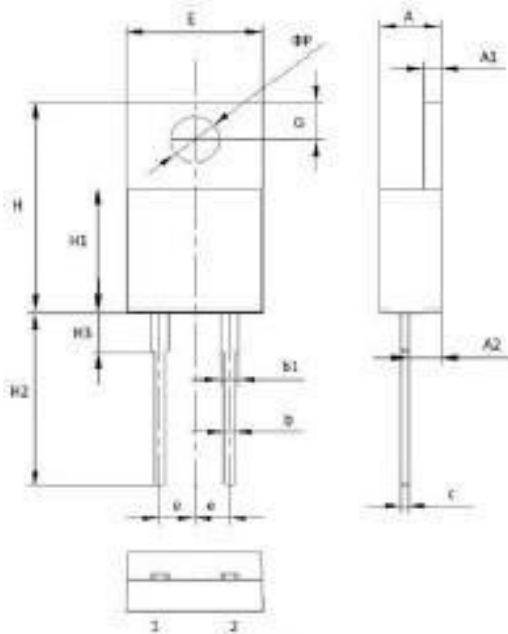


Figure 2. Reverse Characteristic (typ.)

Package Information

TO-220-2 PACKAGE



Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.30	4.70
A1	1.17	1.37
A2	2.20	2.60
b	0.60	1.00
b1	1.17	1.37
c	0.30	0.70
e	2.34	2.74
E	9.70	10.10
H	15.50	15.90
H1	9.00	9.40
H2	12.58	13.58
H3	2.80	3.20
G	2.60	3.00
$\Phi P$	3.40	3.80

**NOTE:**

1. Exceeding the maximum ratings of the device in performance may cause damage to the device, even the permanent failure, which may affect the dependability of the machine. Please do not exceed the absolute maximum ratings of the device when circuit designing.
2. When installing the heat sink, please pay attention to the torsional moment and the smoothness of the heat sink.
3. MOSFETs is the device which is sensitive to the static electricity, it is necessary to protect the device from being damaged by the static electricity when using it.
4. Shenzhen Minos reserves the right to make changes in this specification sheet and is subject to change without prior notice.

**CONTACT:**

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