

FRED
Ultrafast Soft Recovery Diode, 200V,10A×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.

General Features

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

Application

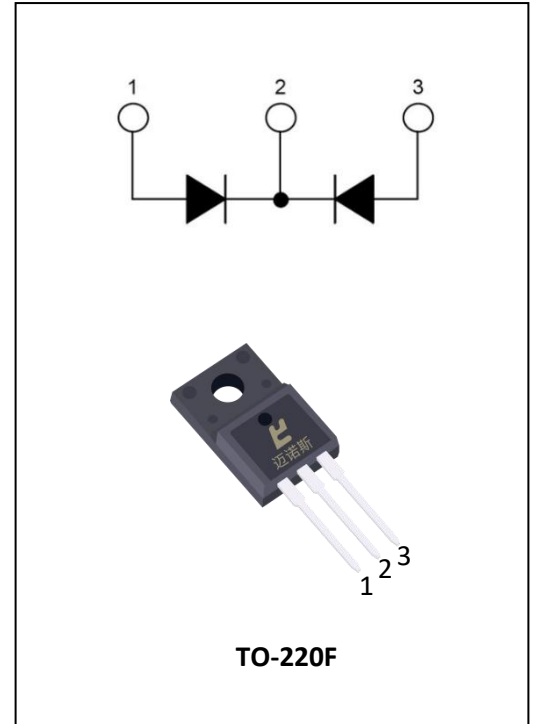
- ① Freewheeling diode, snubber diode
- ② Uninterruptible power supplies (UPS)

Absolute Maximum Ratings

Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	V_{RRM}		200	V
Continuous forward current	$I_{F(AV)}$	$T_A=110^{\circ}C$	20	A
Single pulse forward current	I_{FSM}	$T_A=25^{\circ}C$	96	A
Maximum repetitive forward current	I_{FRM}	Square wave, 20kHz	64	A
Operating junction	T_j		175	$^{\circ}C$
Storage temperatures	T_{stg}		-55 to +175	$^{\circ}C$

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

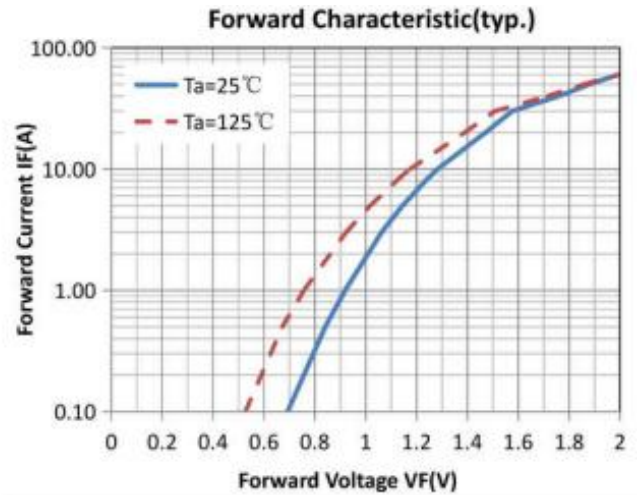
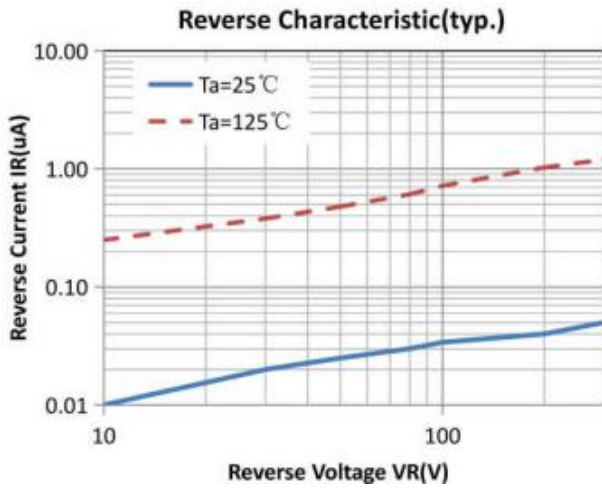
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage	V_{BR}	$I_R=100\mu A$	200			V
Blocking voltage	V_R					
Forward voltage	V_F	$I_F=10 A$		0.98	1.15	V
		$I_F=10 A, T_j=125^{\circ}C$		0.9	1.05	V
Reverse leakage current	I_R	$V_R=V_{RRM}$			20	μA
		$T_j=150^{\circ}C, V_R=200V$			200	μA
Reverse recovery time	t_{rr}	$I_F=0.5A, I_R=1A, I_{RR}=0.25A$		25	35	ns
		$I_F=1A, V_R=30V, di/dt=200A/us$		20	30	ns



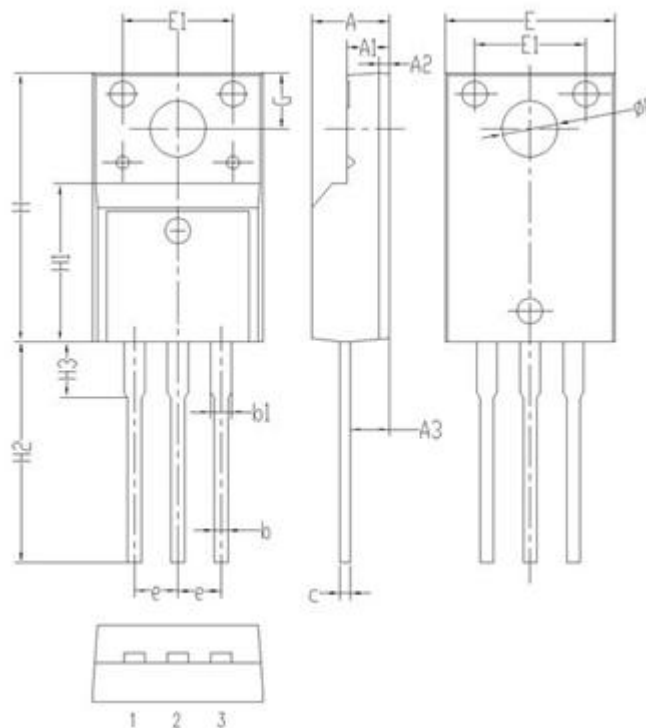
Thermal characteristics

Parameter	Symbol	Typ.	Units
Junction-to-Case	R_{thJC}	4.2	$^{\circ}C/W$

Characteristics Curves



Package Information



Symbol	Values(mm)	
	MIN	MAX
A	4.35	4.75
A1	2.30	2.70
A2	0.40	0.80
A3	2.10	2.50
b	0.60	1.00
b1	1.00	1.40
c	0.30	0.70
e	2.30	2.70
E	9.80	10.2
E1	6.30	6.70
H	15.6	16.0
H1	8.80	9.20
H2	12.9	13.5
H3	3.10	3.50
G	3.10	3.50
φp	3.10	3.50

TO-220F Package



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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:

深圳市迈诺斯科技有限公司（总部）

地址：深圳市福田区华富街道田面社区深南中路4026号田面城市大厦16D

邮编：518025

电话：0755-83273777