

## Ultrafast Soft Recovery Diode

### 30A 600V trr ~ 35 ns

#### Features

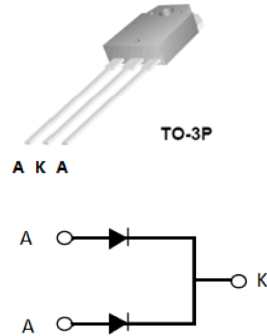
Ultrafast Recovery  
 175°C operating junction temperature  
 Designed and qualified for industrial level

#### Benefits

Reduced RFI and EMI  
 Higher frequency operation  
 Reduced snubbing  
 Reduced part count

#### Description/Applications

These diodes are optimized to reduce losses and EMI/RFI in high frequency power conditioning system. The softness of the recovery eliminates the need for a snubber in most applications. These devices are ideally suited for HF welding power converters and other applications where switching losses are not significant portion of the total losses.



### Absolute Maximum Ratings T<sub>c</sub> = 25 °C unless otherwise noted

Symbol	Parameter	Test Condition	Values	Units
V <sub>R</sub>	Cathode – Anode voltage	--	600	V
I <sub>F(AV)</sub>	Continuous forward current	T <sub>c</sub> = 25 °C	30	A
I <sub>FSM</sub>	Single pulse forward current	T <sub>c</sub> = 25 °C	300	A
I <sub>FRM</sub>	Maximum repetitive forward current	Square wave 20 kHz	60	A
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature Range	--	-55 to +175	°C

### Thermal characteristics

Symbol	Parameter	Values	Units
R <sub>θJC</sub>	Thermal Resistance, Junction-to-Case	0.5	°C/W

### Electrical Characteristics T<sub>J</sub> = 25 °C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V <sub>BR</sub> , V <sub>R</sub>	Breakdown Voltage, Blocking Voltage	I <sub>R</sub> = 100 uA	600	--	--	V
V <sub>F</sub>	Forward voltage	I <sub>F</sub> = 30 A, T <sub>J</sub> = 25 °C	--	1.55	1.75	V
		I <sub>F</sub> = 30 A, T <sub>J</sub> = 125 °C	--	1.45	1.65	V
I <sub>R</sub>	Reverse Leakage Current	V <sub>R</sub> = V <sub>R rated</sub>	--	--	1	uA
		V <sub>R</sub> = V <sub>R rated</sub> , T <sub>J</sub> = 150 °C	--	--	100	uA
trr	Reverse recovery time	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A, I <sub>RR</sub> = 0.25A	--	--	35	ns
		I <sub>F</sub> = 1A, V <sub>R</sub> = 30V, di/dt = -200A/us	--	--	35	ns