

## 1. Benefits

- n Higher safety margin against overvoltage
- n Improved efficiency all load conditions
- n Increased efficiency compared to Silicon Diode alternatives
- n Reduction of Heat Sink Requirements
- n Parallel Devices Without Thermal Runaway
- n Essentially No Switching Losses

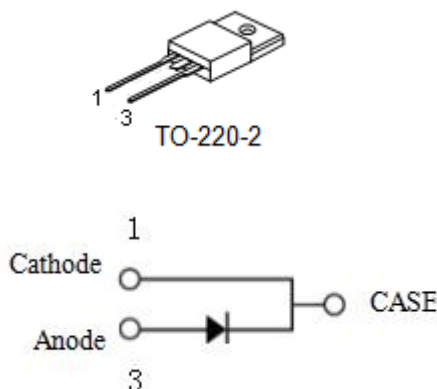
## 2. Features

- n 650-Volt Schottky Rectifier
- n Shorter recovery time
- n High-speed switching possible
- n High-Frequency Operation
- n Temperature-Independent Switching Behavior
- n Extremely Fast Switching
- n Positive Temperature Coefficient on VF

## 3. Applications

- n Switch Mode Power Supplies
- n Power Factor Correction
- n Motor Drives
- n HID Lighting

## 4. Pin configuration



Pin	Function
1	Cathode
2	-
3	Anode

**5. Absolute Maximum Ratings** (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Rating	Units
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	650	V
Surge Peak Reverse voltage	V <sub>RSM</sub>	650	V
DC Blocking Voltage	V <sub>DC</sub>	650	V
Continuous forward current T <sub>C</sub> = 25° C T <sub>C</sub> = 135° C T <sub>C</sub> = 150° C	I <sub>F</sub>	24 9 6	A
Repetitive Peak Forward Current	I <sub>FRM</sub>	42	A
Surge no repetitive forward current	I <sub>FSM</sub>	54	A
Power Dissipation T <sub>C</sub> = 25° C T <sub>C</sub> = 110° C	P <sub>tot</sub>	88 38	W
Operating Junction and storage temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +175	°C

**6. Thermal characteristics**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Thermal resistance	R <sub>th(J-C)</sub>	-	-	3.2	-	°C/W

**7. Electrical characteristics**

Parameter	Symbol	Conditions	Rating			Unit	
			Min	Typ	Max		
Gate Threshold Voltage	V <sub>F</sub>	I <sub>F</sub> =6A	T <sub>C</sub> =25°C	-	1.4	1.8	V
			T <sub>C</sub> =175°C	-	2.1	3.0	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =650V	T <sub>C</sub> =25°C	-	10	60	μA
			T <sub>C</sub> =175°C	-	52	500	
Total Capacitive Charge	Q <sub>C</sub>	VR =400V, IF =6A T <sub>J</sub> = 25°C $Q_C = \int C(V) dv$	-	21	-	nC	
Total Capacitance	C	T <sub>J</sub> = 25 °C, f = 1MHz	V <sub>R</sub> =0V	-	395	-	pF
			V <sub>R</sub> =200V	-	49		
			V <sub>R</sub> =400V	-	33		
Capacitance Stored Energy	EC	VR=400V	-	4.4	-	μJ	

**8. Typical Characteristics**

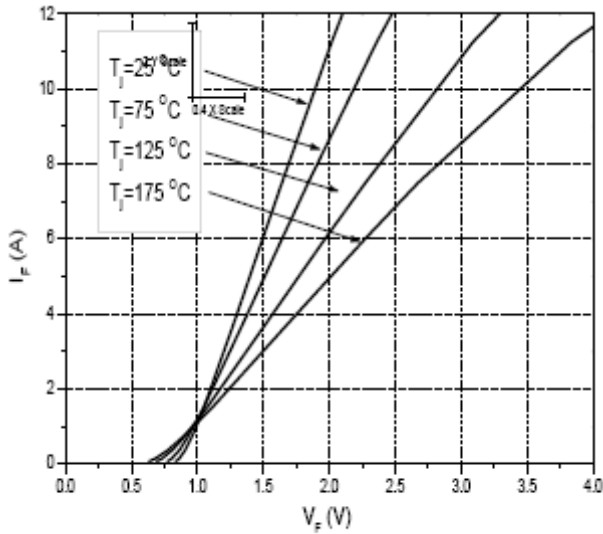


Figure 1. Forward Characteristics

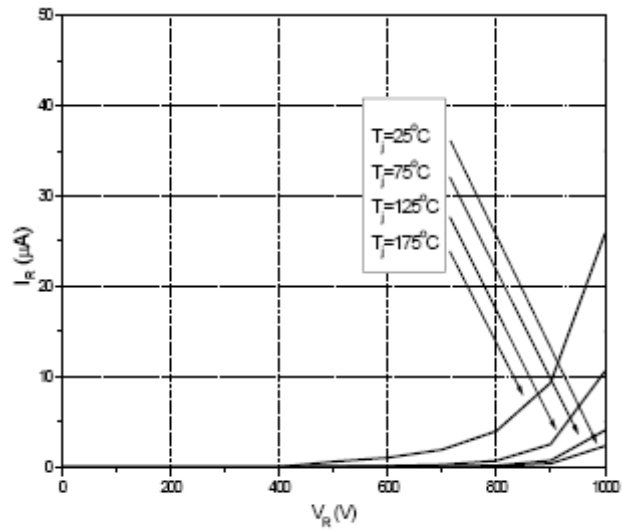


Figure 2. Reverse Characteristics

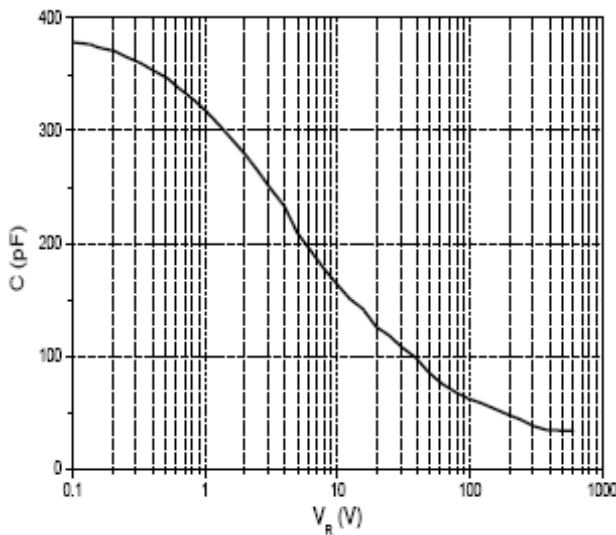


Figure 3. Capacitance vs. Reverse Voltage

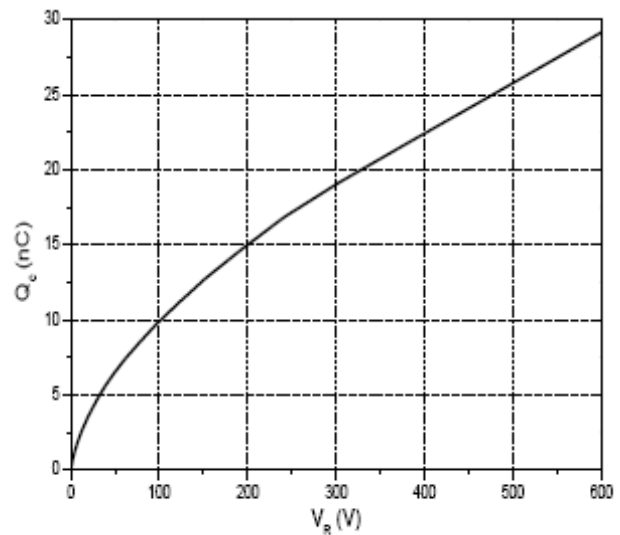


Figure 4. Total Capacitance Charge vs. Reverse Voltage

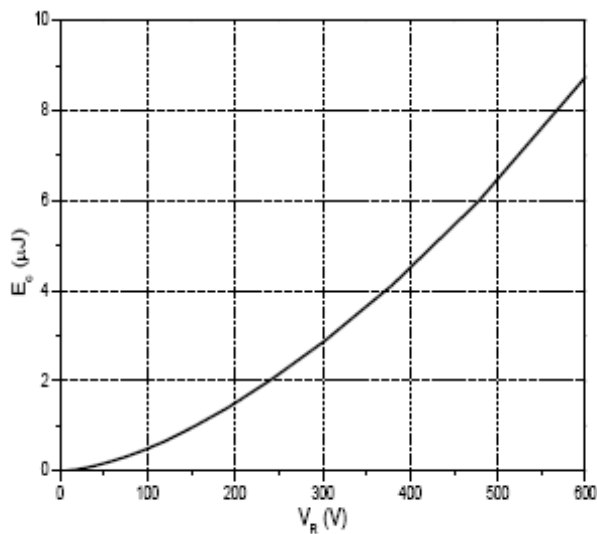


Figure 5. Capacitance Stored Energy