

## 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 Essentialy No Switching Losses

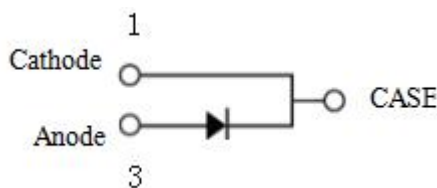
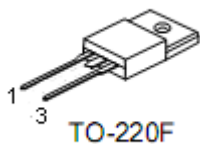
## 2. Features

- 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

( $T_J=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Rating	Units
Repetitive Peak Reverse Voltage	$V_{RRM}$	650	V
Surge Peak Reverse voltage	$V_{RSM}$	650	V
DC Blocking Voltage	$V_{DC}$	650	V
Continuous forward current $T_C = 25^{\circ}\text{C}$ $T_C = 135^{\circ}\text{C}$ $T_C = 152^{\circ}\text{C}$	$I_F$	30 14 10	A
Repetitive Peak Forward Current	$I_{FRM}$	46	A
Surge no repetitive forward current	$I_{FSM}$	90	A
Power Dissipation	$P_D$	109	W
Operating Junction and storage temperature	$T_J, T_{stg}$	-55 to +175	$^{\circ}\text{C}$

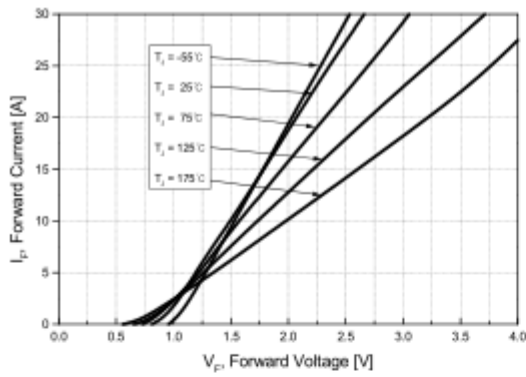
## 6. Thermal characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Thermal resistance	$R_{th(J-C)}$	-	-	1.4	1.7	$^{\circ}\text{C/W}$

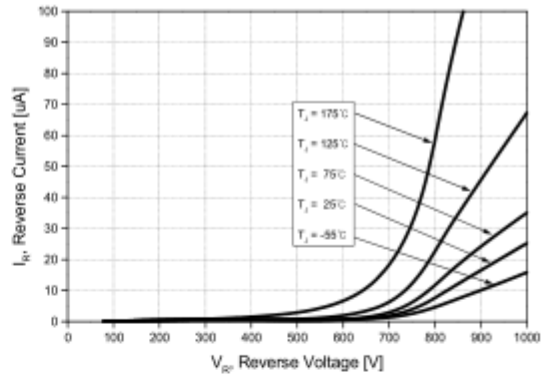
## 7. Electrical characteristics

Parameter	Symbol	Conditions	Rating			Unit	
			Min	Typ	Max		
Gate Threshold Voltage	$V_F$	$I_F=10\text{A}$	$T_C=25^{\circ}\text{C}$	-	1.5	1.8	V
			$T_C=175^{\circ}\text{C}$	-	2.0	2.4	
Reverse Current	$I_R$	$V_R=650\text{V}$	$T_C=25^{\circ}\text{C}$	-	10	50	$\mu\text{A}$
			$T_C=175^{\circ}\text{C}$	-	20	200	
Total Capacitive Charge	$Q_C$	$V_R=400\text{V}, I_F=10\text{A}$ $di/dt = 300\text{A}/\mu\text{s}, T_J = 25^{\circ}\text{C}$	-	47	-	nC	
Total Capacitance	$C$	$V_R=0\text{V}, T_J = 25^{\circ}\text{C}, f = 1\text{MHz}$	-	540	-	pF	

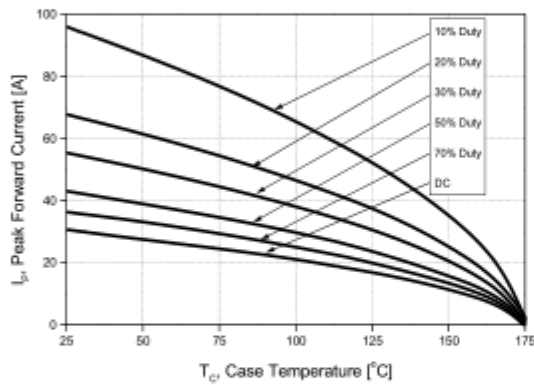
**8. Typical Characteristics**



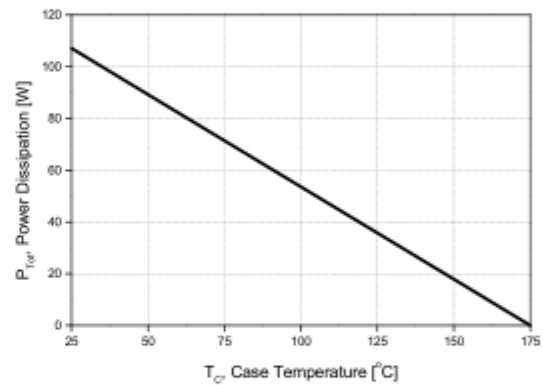
**Figure 1. Forward Characteristics**



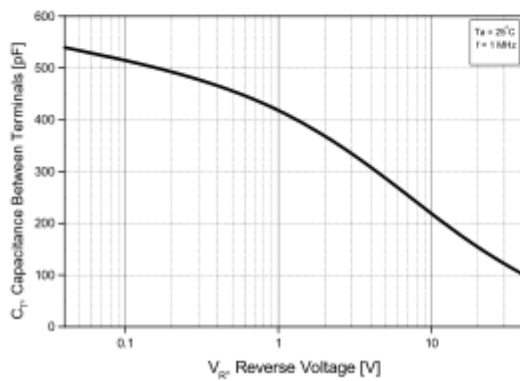
**Figure 2. Reverse Characteristics**



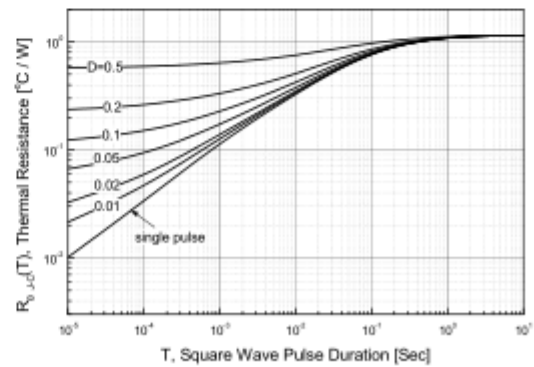
**Figure 3. Derating Curve  $I_p$ - $T_c$**



**Figure 4. Power Dissipation**



**Figure 5.  $V_R$ - $C_T$  Characteristics**



**Figure 6. Transient Thermal Response Curve**