



## Features

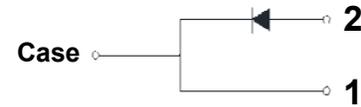
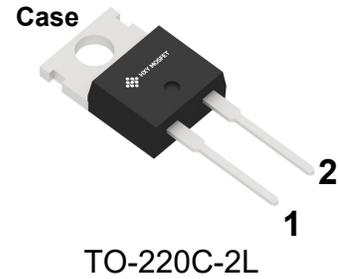
- 650-Volt Schottky Rectifier
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on  $V_F$

## Benefits

- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

## Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drives



Part Number	Package	Qty(PCS)
VS3C08ET07T-M3	TO-220C-2L	50

## Maximum Ratings ( $T_C = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions
$V_{RRM}$	Repetitive Peak Reverse Voltage	650	V	
$V_{RSM}$	Surge Peak Reverse Voltage	650	V	
$I_F$	Continuous Forward Current	28 13 8	A	$T_C=25^\circ\text{C}$ $T_C=135^\circ\text{C}$ $T_C=156.5^\circ\text{C}$
$I_{FRM}$	Repetitive Peak Forward Surge Current	40	A	$T_C=25^\circ\text{C}$ , $t_p = 10$ ms, Half Sine Wave
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current	88	A	$T_C=25^\circ\text{C}$ , $t_p = 10$ ms, Half Sine Wave
$P_{tot}$	Power Dissipation	107 46	W	$T_C=25^\circ\text{C}$ $T_C=110^\circ\text{C}$
$T_J, T_{stg}$	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$	
M	Mounting Torque	1	Nm	M3 Screw
$\int i^2 dt$	$i^2 dt$ value	39	$\text{A}^2\text{s}$	$T_C=25^\circ\text{C}$ , $t_p = 10$ ms, Half Sine Wave



### Electrical Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
$V_{DC}$	DC Blocking Voltage	650			V	
$V_F$	Forward Voltage		1.38 1.65	1.7 2	V	$I_F = 8\text{ A } T_J = 25^\circ\text{C}$ $I_F = 8\text{ A } T_J = 175^\circ\text{C}$
$I_R$	Reverse Current		0.2 2	50 100	$\mu\text{A}$	$V_R = 650\text{ V } T_J = 25^\circ\text{C}$ $V_R = 650\text{ V } T_J = 175^\circ\text{C}$
$Q_C$	Total Capacitive Charge		28		nC	$V_R = 400\text{ V } T_J = 25^\circ\text{C}$
C	Total Capacitance		541 55 54		pF	$V_R = 0\text{ V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$ $V_R = 200\text{ V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$ $V_R = 400\text{ V}, T_J = 25^\circ\text{C}, f = 1\text{ MHz}$
$E_C$	Capacitance Stored Energy		7		$\mu\text{J}$	$V_R = 400\text{ V}$

### Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.4	$^\circ\text{C/W}$

### Typical Performance

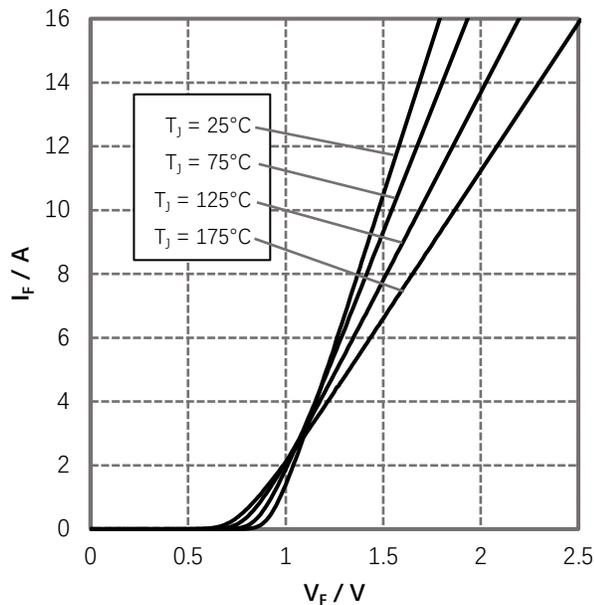


Figure 1. Forward Characteristics

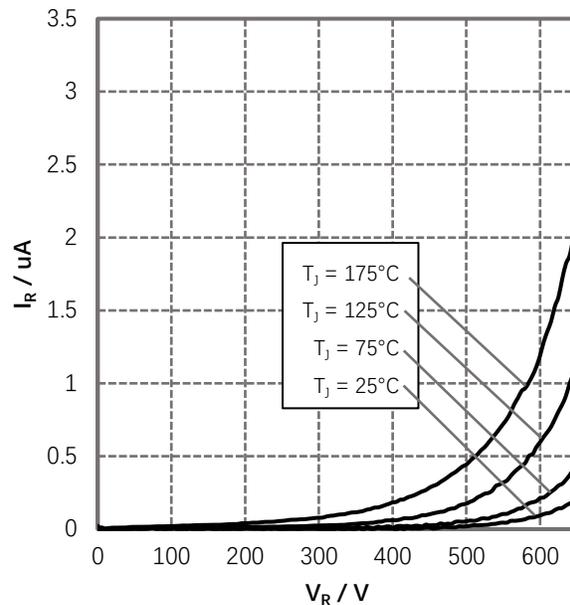


Figure 2. Reverse Characteristics

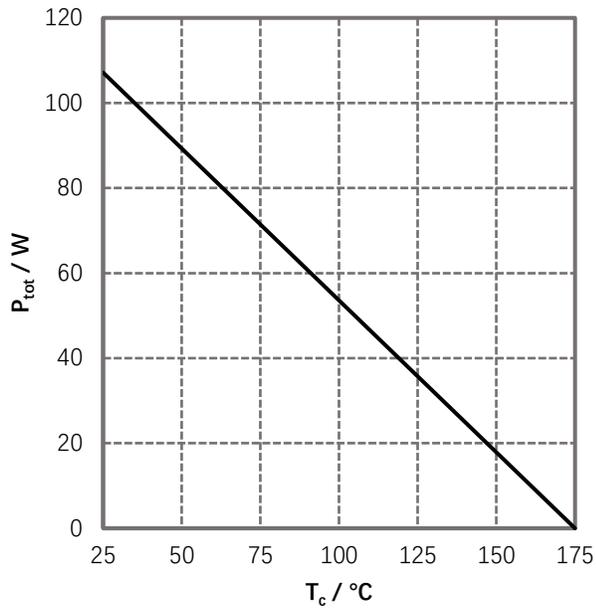


Figure 3. Power Derating

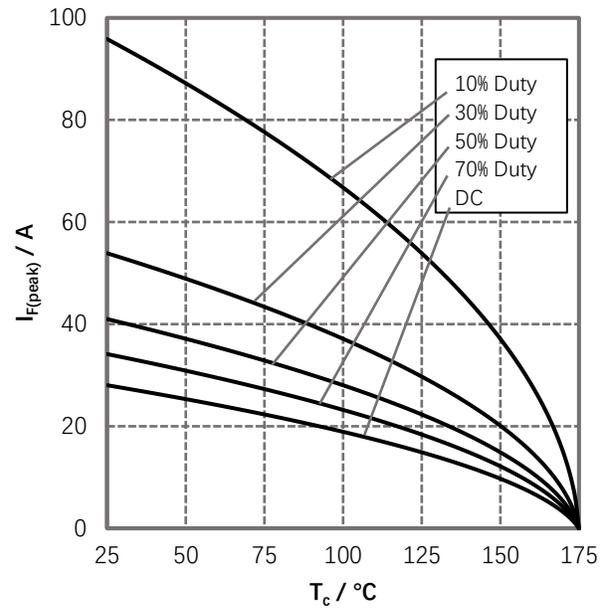


Figure 4. Current Derating

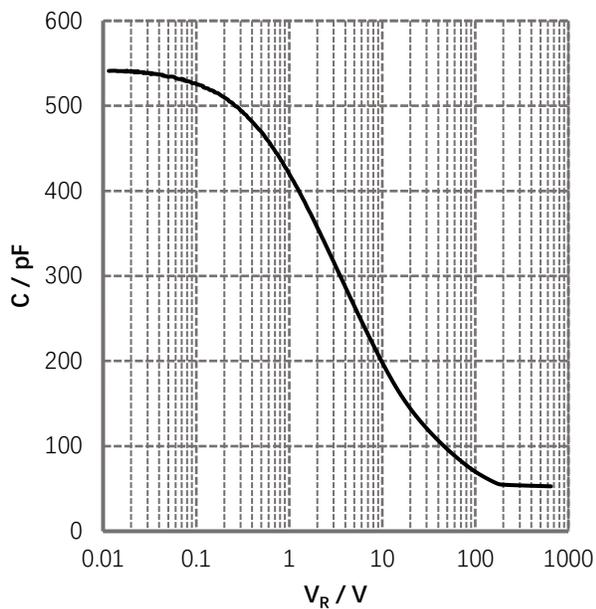


Figure 5. Capacitance vs. Reverse Voltage

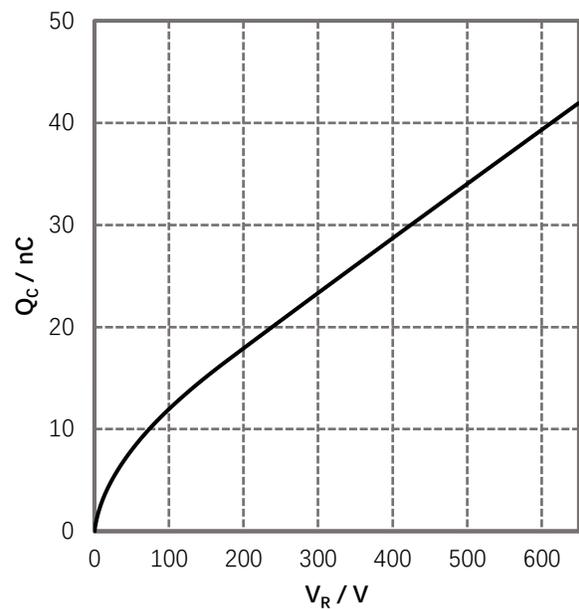


Figure 6. Total Capacitance Charge vs. Reverse Voltage

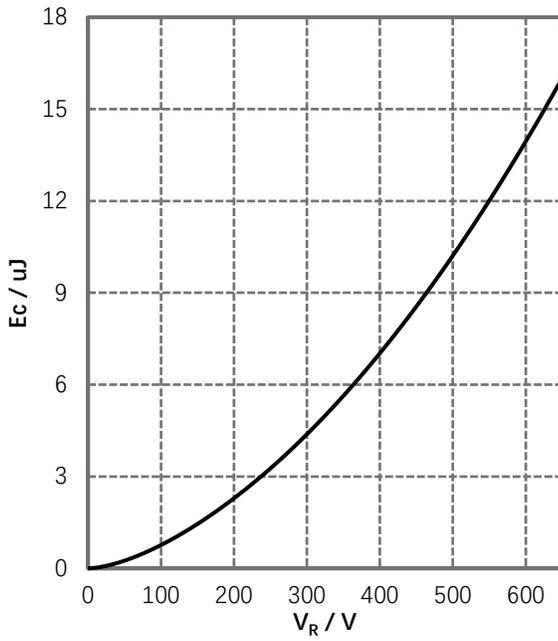


Figure 7. Capacitance Stored Energy

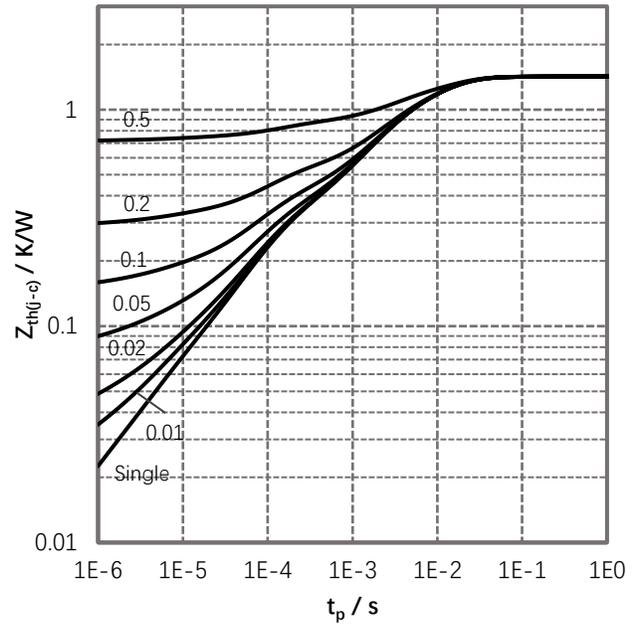


Figure 8. Transient Thermal Impedance





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