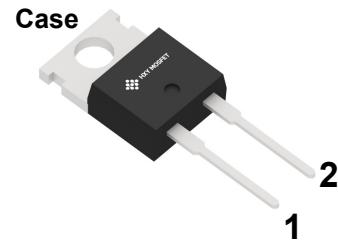




Features

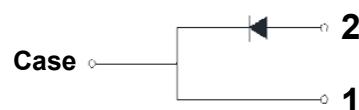
- 650-Volt Schottky Rectifier
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on V_F



TO-220C-2L

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)
WNSC6D06650Q	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	22.3 10.4 6	A	$T_c=25^\circ\text{C}$ $T_c=135^\circ\text{C}$ $T_c=158.5^\circ\text{C}$
I_{FRM}	Repetitive Peak Forward Surge Current	33	A	$T_c=25^\circ\text{C}$, $t_p = 10$ ms, Half Sine Wave
I_{FSM}	Non-Repetitive Peak Forward Surge Current	66	A	$T_c=25^\circ\text{C}$, $t_p = 10$ ms, Half Sine Wave
P_{tot}	Power Dissipation	88 38	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	°C	
	Mounting Torque	1	Nm	M3 Screw



Electrical Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
V_{DC}	DC Blocking Voltage	650			V	
V_F	Forward Voltage		1.36 1.64	1.7 2	V	$I_F = 6 \text{ A}$ $T_J = 25^\circ\text{C}$ $I_F = 6 \text{ A}$ $T_J = 175^\circ\text{C}$
I_R	Reverse Current		0.12 0.91	50 100	μA	$V_R = 650 \text{ V}$ $T_J = 25^\circ\text{C}$ $V_R = 650 \text{ V}$ $T_J = 175^\circ\text{C}$
Q_c	Total Capacitive Charge		22		nC	$V_R = 400 \text{ V}$ $T_J = 25^\circ\text{C}$
C	Total Capacitance		440 42 41		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		5		μJ	$V_R = 400 \text{ V}$

Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.7	$^\circ\text{C/W}$

Typical Performance

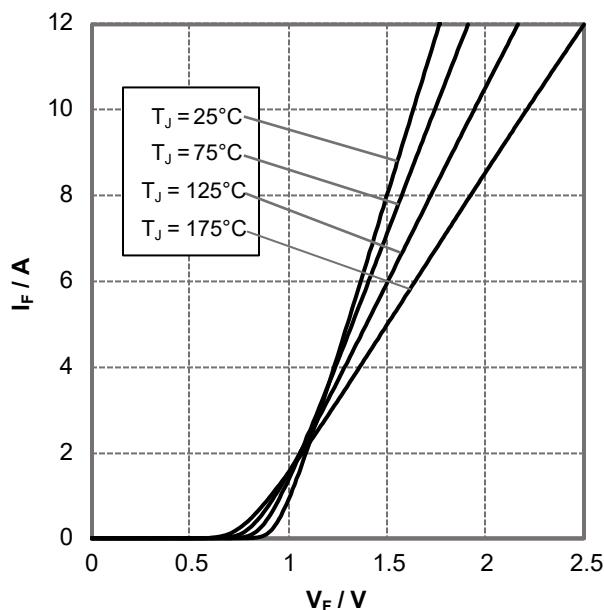


Figure 1. Forward Characteristics

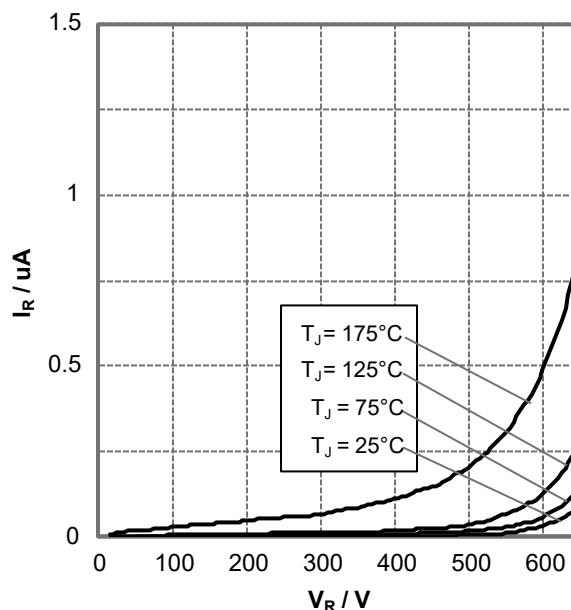
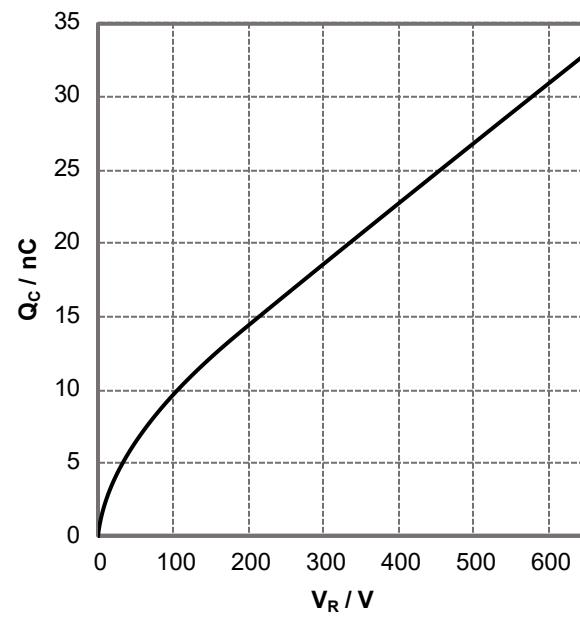
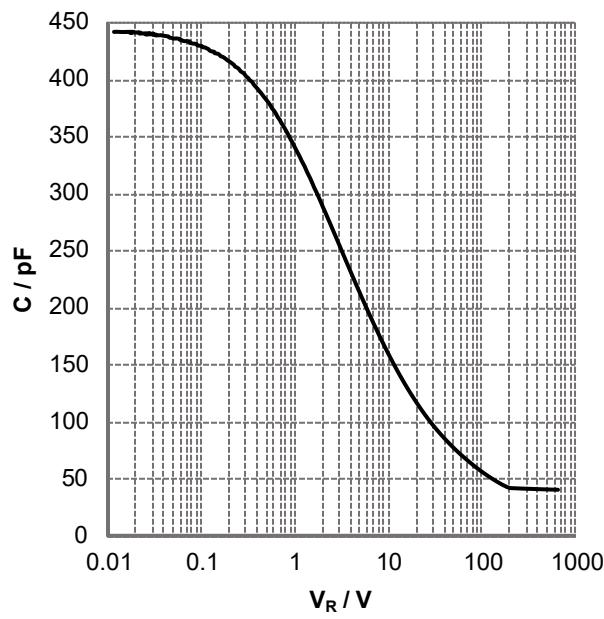
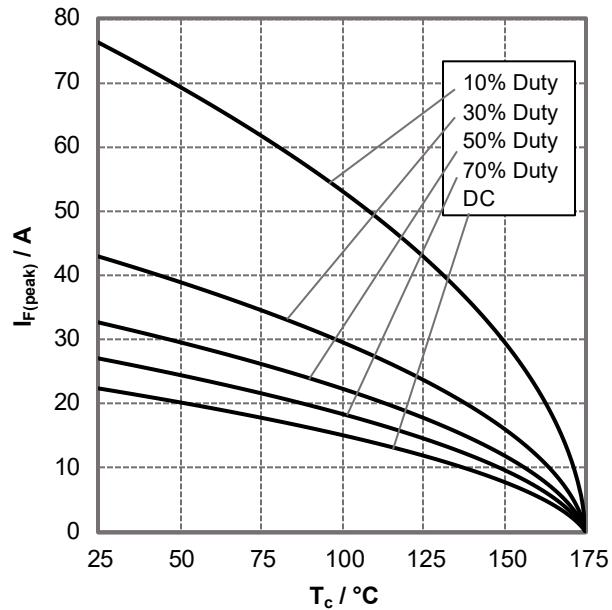
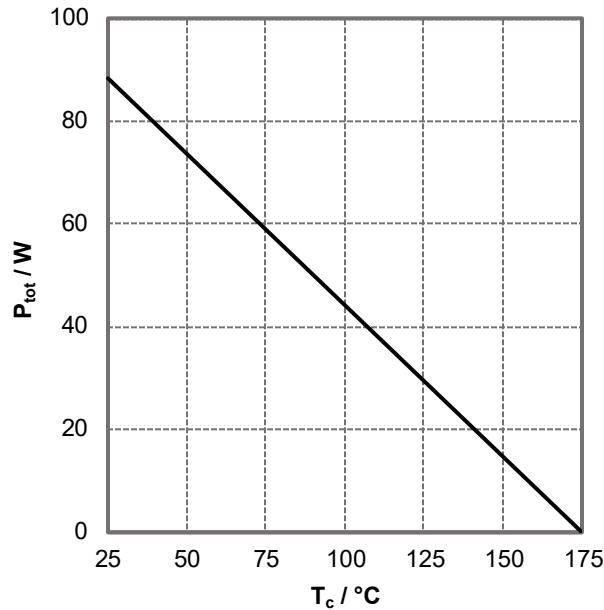


Figure 2. Reverse Characteristics



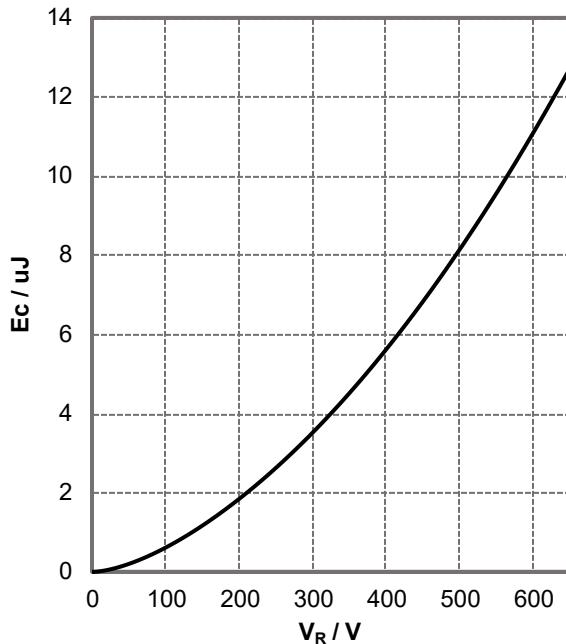


Figure 7. Capacitance Stored Energy

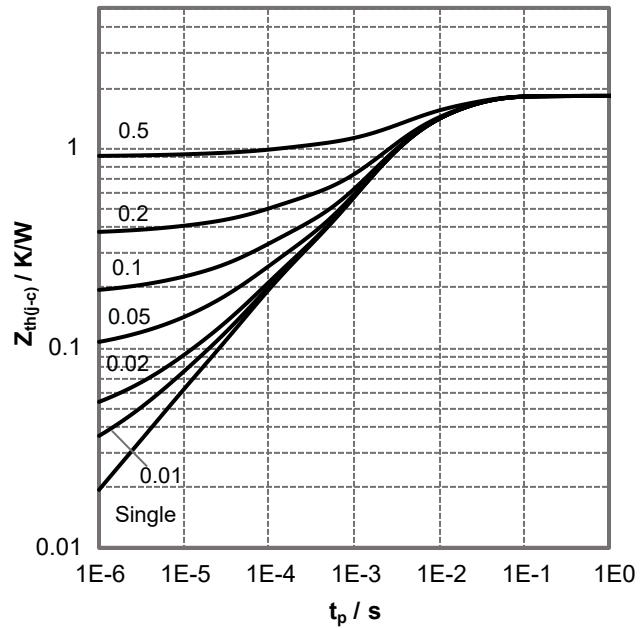
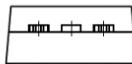
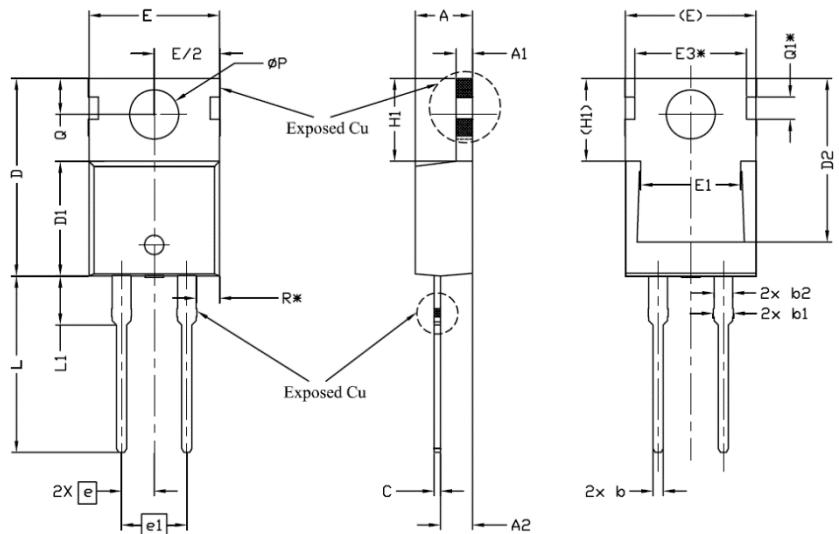


Figure 8. Transient Thermal Impedance

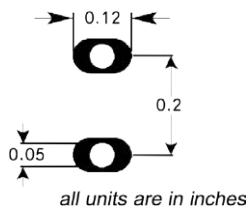


Package Information TO-220C-2L



SYMBOL	DIMENSIONS			NOTES
	MIN.	NOM.	MAX.	
A	4,24	4,44	4,64	
A1	1,15	1,27	1,40	
A2	2,30	2,48	2,70	
b	0,70	0,80	0,90	
b1	1,20	1,55	1,75	
b2	1,20	1,45	1,70	
c	0,40	0,50	0,60	
D	14,70	15,37	16,00	4
D1	8,82	8,92	9,02	
D2	12,43	12,73	12,83	5
E	9,96	10,16	10,36	4,5
E1	6,86	7,77	8,89	5
E3*	8,70REF.			
e	2,54BSC			
e1	5,08BSC			
H1	6,30	6,45	6,60	5,6
L	13,47	13,72	13,97	
L1	3,60	3,80	4,00	
ØP	3,75	3,84	3,93	
Q	2,60	2,80	3,00	
Q1*	1,73REF.			
R*	1,82REF.			

Recommended Solder Pad Layout



TO-220C-2L



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