



## Features

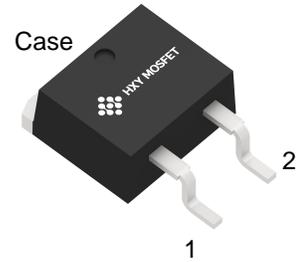
- 650-Volt Schottky Rectifier
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on  $V_F$

## Benefits

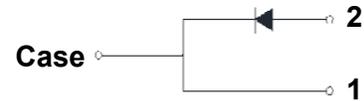
- Replace Bipolar with Unipolar Rectifiers
- Essentially No Switching Losses
- Higher Efficiency
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway

## Applications

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



TO-263N



Part Number	Package	Qty(PCS)
PCDB0665G1_R2_00001	TO-263N	800

## 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	22.9 10.7 6	A	$T_C=25^\circ\text{C}$ $T_C=135^\circ\text{C}$ $T_C=159^\circ\text{C}$
$I_{FRM}$	Repetitive Peak Forward Surge Current	30	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	92 40	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	$^\circ\text{C}$	
$\int i^2 dt$	$i^2 dt$ value	22	$\text{A}^2\text{s}$	$T_C=25^\circ\text{C}$ , $t_p = 10$ 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		1.36 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	$\mu\text{A}$	$V_R = 650\text{ V}$ $T_J = 25^\circ\text{C}$ $V_R = 650\text{ V}$ $T_J = 175^\circ\text{C}$
$Q_C$	Total Capacitive Charge		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		$\mu\text{J}$	$V_R = 400\text{ V}$

### Thermal Characteristics

Symbol	Parameter	Typ.	Unit
$R_{\theta JC}$	Thermal Resistance from Junction to Case	1.63	$^\circ\text{C/W}$

### Typical Performance

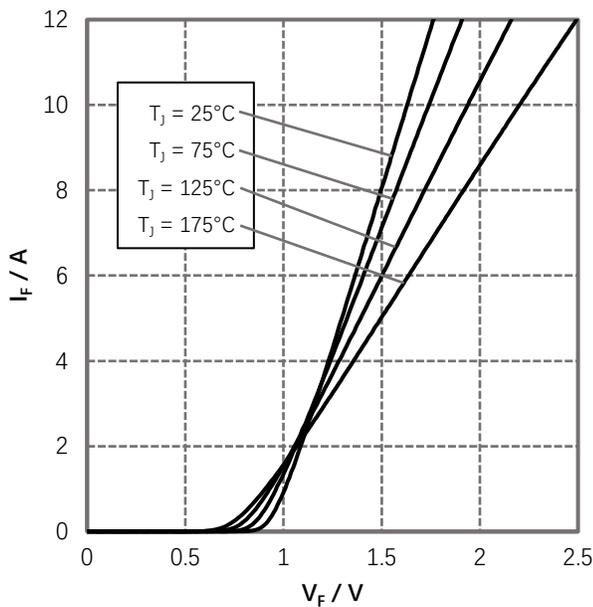


Figure 1. Forward Characteristics

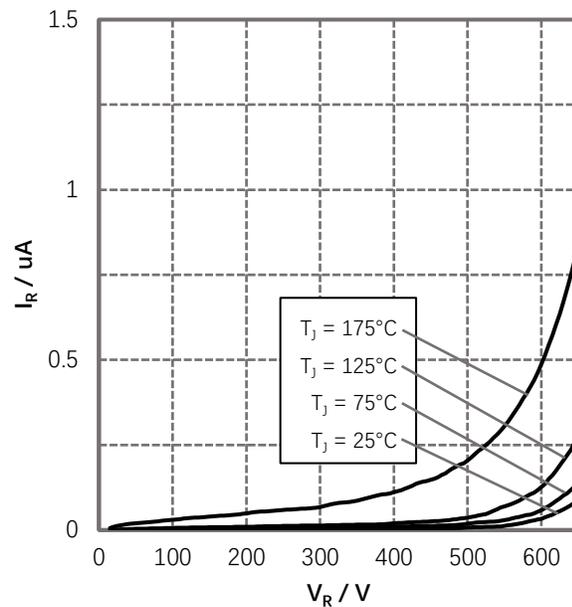


Figure 2. Reverse Characteristics

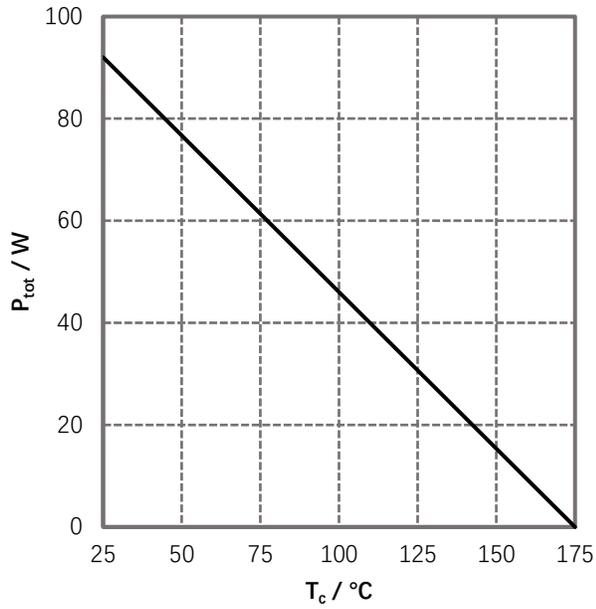


Figure 3. Power Derating

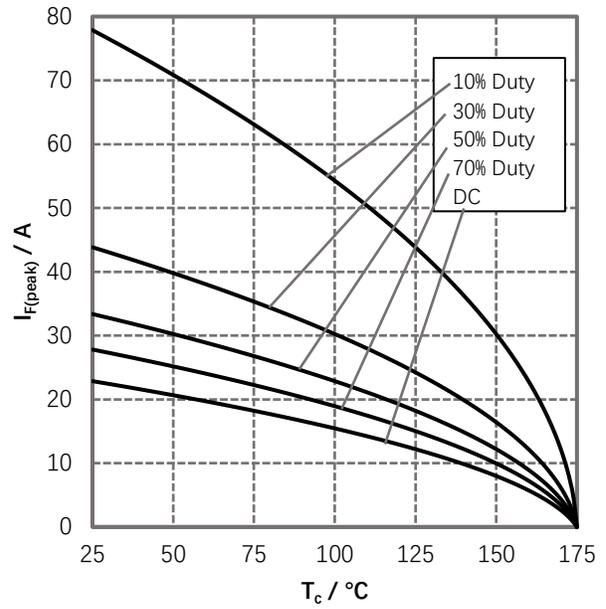


Figure 4. Current Derating

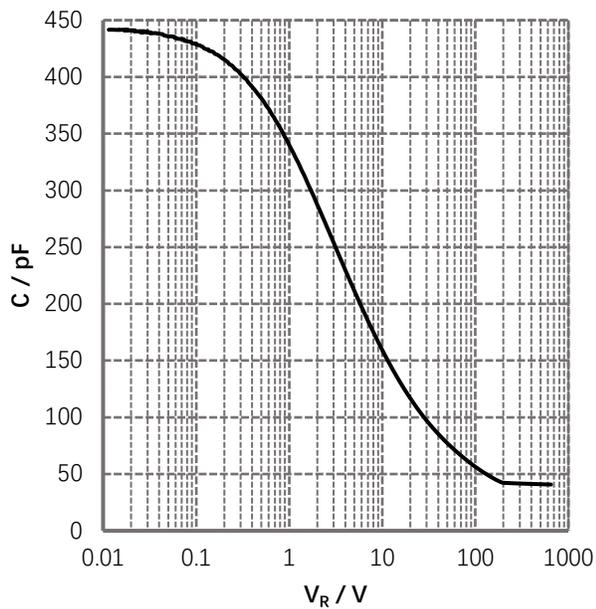


Figure 5. Capacitance vs. Reverse Voltage

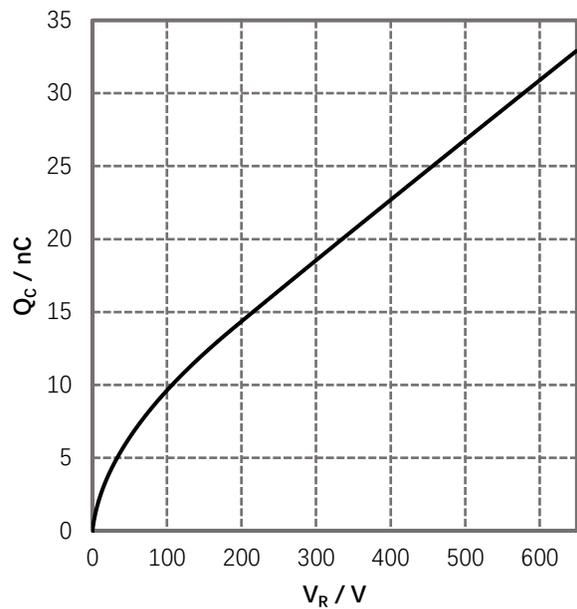


Figure 6. Total Capacitance Charge vs. Reverse Voltage

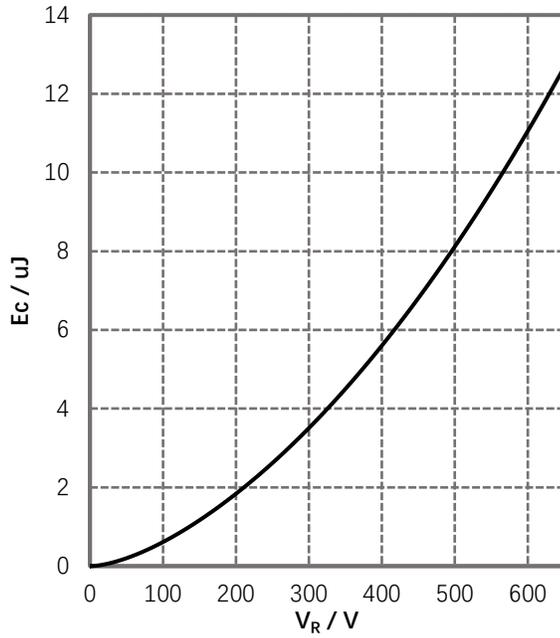


Figure 7. Capacitance Stored Energy

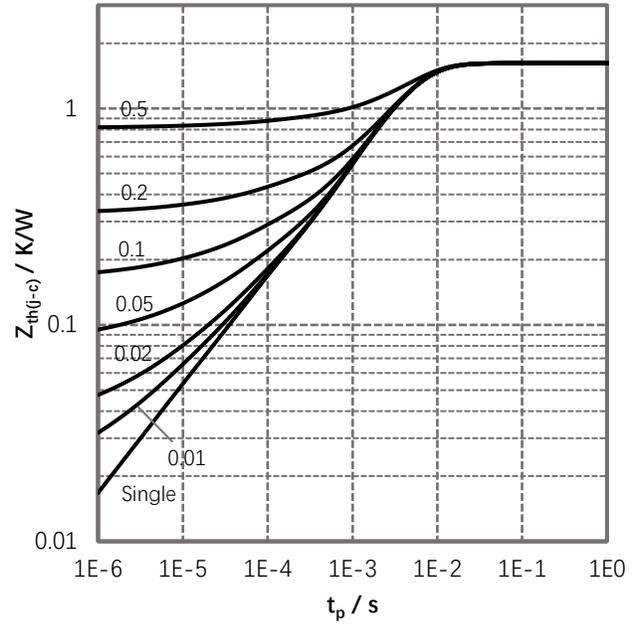
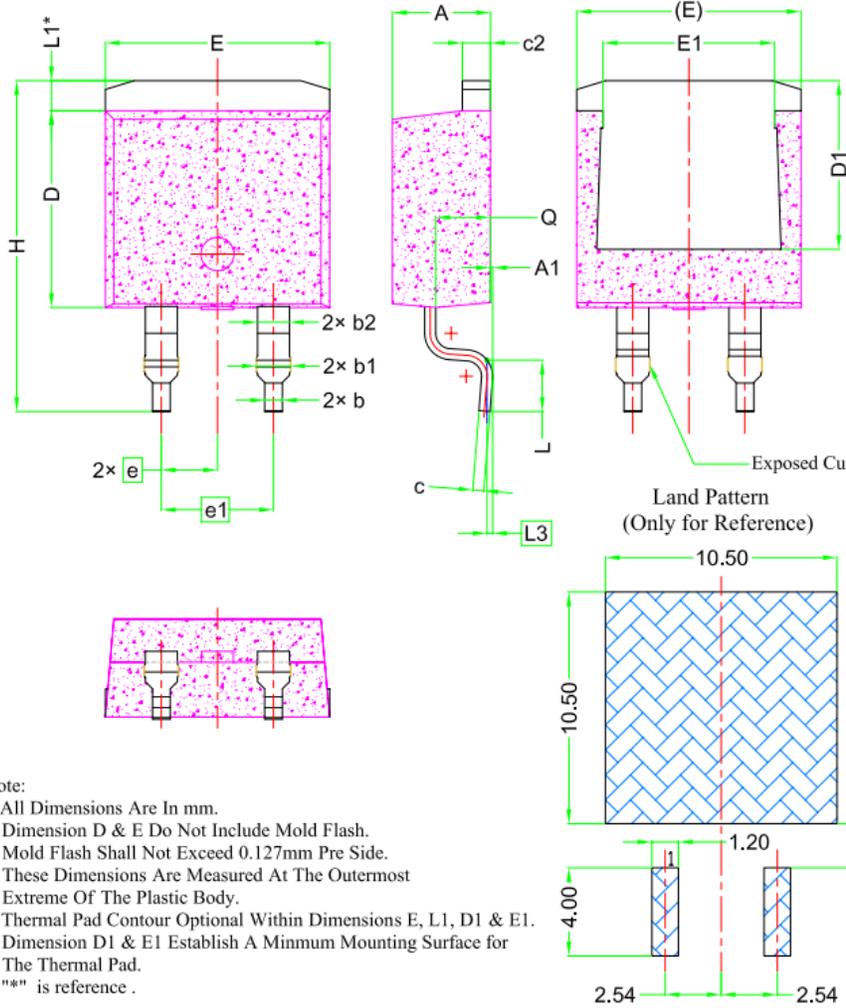


Figure 8. Transient Thermal Impedance



**Package Information**  
**TO-263N**



SYMBOL	DIMENSIONS		
	MIN.	NOM.	MAX.
A	4.24	4.44	4.64
A1	0.00	0.10	0.25
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
c2	1.15	1.27	1.40
D	8.82	8.92	9.02
D1	6.86	7.65	—
E	9.96	10.16	10.36
E1	6.89	7.77	7.89
e	2.54 BSC		
e1	5.08 BSC		
H	14.61	15.00	15.88
L	1.78	2.32	2.79
L1	1.36 REF.		
L3	0.25 BSC		
Q	2.30	2.48	2.70

- Note:
1. All Dimensions Are In mm.
  2. Dimension D & E Do Not Include Mold Flash.  
Mold Flash Shall Not Exceed 0.127mm Pre Side.  
These Dimensions Are Measured At The Outermost Extreme Of The Plastic Body.
  3. Thermal Pad Contour Optional Within Dimensions E, L1, D1 & E1.
  4. Dimension D1 & E1 Establish A Minnum Mounting Surface for The Thermal Pad.
  5. "\*" is reference .



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