

### Features

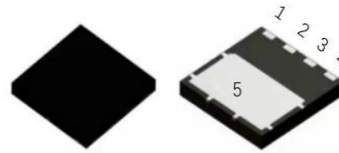
- Low reverse current
- Good surge current capability
- Low capacitive charge
- No reverse recovery current
- Compliant to Halogen-free

$V_{RRM}$	=	650	V
$I_F (T_C=158^{\circ}C)$	=	10	A
$Q_C$	=	27	nC

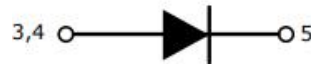
### Benefits

- System efficiency improvement over Si diodes
- Higher switching frequency
- Increased power density
- Essentially no switching losses

### Package



DFN8\*8



### Applications

- Switch mode power supplies (SMPS)
- Uninterruptible power supplies
- On Board Charger
- UPS

### Package Pin Definitions

- Pin1,2 - N/C
- Pin3,4 - Cathode
- Pin5 - Anode

Part Number	Package	Marking
ASZD010065D88	DFN8*8	ASZD010065D88

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

Symbol	Parameter	Test conditions	Value	Unit
$V_{RRM}$	Repetitive peak reverse voltage		650	V
$V_{RSM}$	Non-repetitive peak reverse voltage		650	V
$I_F$	Continuous forward current	$T_C = 25^\circ\text{C}$ $T_C = 135^\circ\text{C}$ $T_C = 158^\circ\text{C}$	34 17 10	A
$I_{FRM}$	Repetitive forward surge current	$T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse $T_C = 110^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	45 27	A
$I_{FSM}$	Non-Repetitive forward surge current	$T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse $T_C = 110^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	80 70	A
$\int i^2 dt$	$i^2t$ value	$T_C = 25^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse $T_C = 110^\circ\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	31.7 24.3	A <sup>2</sup> S
$P_{tot}$	Power dissipation	$T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	93 40	W
$T_j$	Operating junction temperature		-55~175	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

### Electrical Characteristics( $T_j = 25^\circ\text{C}$ , unless other wise specified)

Symbol	Parameter	Test conditions	Value			Unit
			Min.	Typ.	Max.	
$V_{DC}$	DC blocking voltage	$T_j = 25^\circ\text{C}$	650			V
$V_F$	Diode forward voltage	$I_F = 10\text{A}$ $T_j = 25^\circ\text{C}$ $I_F = 10\text{A}$ $T_j = 175^\circ\text{C}$		1.3 1.5	1.5	V
$I_R$	Reverse current	$V_R = 650\text{V}$ $T_j = 25^\circ\text{C}$ $V_R = 650\text{V}$ $T_j = 175^\circ\text{C}$			50 200	$\mu\text{A}$
$Q_C$	Total capacitive charge	$V_R = 400\text{V}$ $T_j = 25^\circ\text{C}$ $Q_C = \int_0^{V_R} C(V)dV$		27		nC
$C$	Total capacitance	$V_R = 0\text{V}$ $f = 1\text{MHz}$ $V_R = 200\text{V}$ $f = 1\text{MHz}$ $V_R = 400\text{V}$ $f = 1\text{MHz}$		561 55 43		pF

### Thermal Characteristics

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
$R_{th(jc)}$	Thermal resistance from junction to case		1.60		$^\circ\text{C}/\text{W}$

## Typical Performance

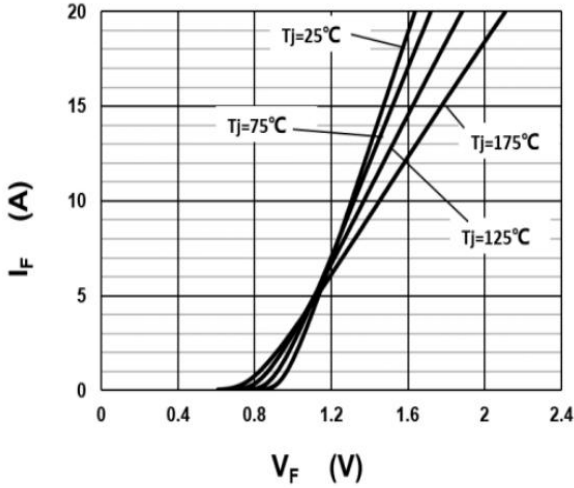


Figure 1. Typical forward characteristics

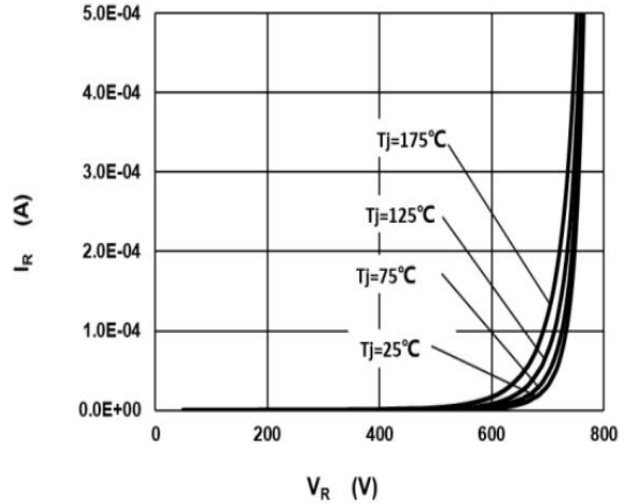


Figure 2. Typical reverse current as function of reverse voltage

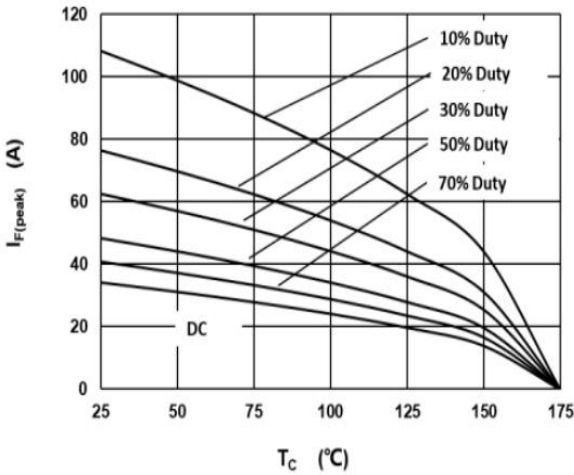


Figure 3. Diode forward current as function of temperature, D=duty cycle

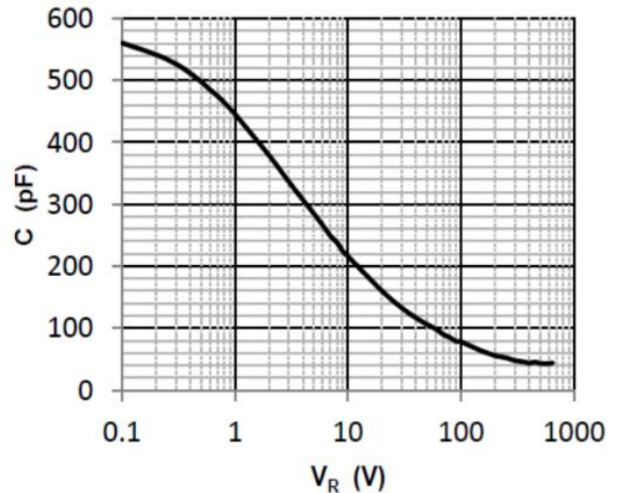


Figure 4. Typical capacitance as function of reverse voltage,  $C=f(V_R)$ ;  $T_j=25^\circ\text{C}$

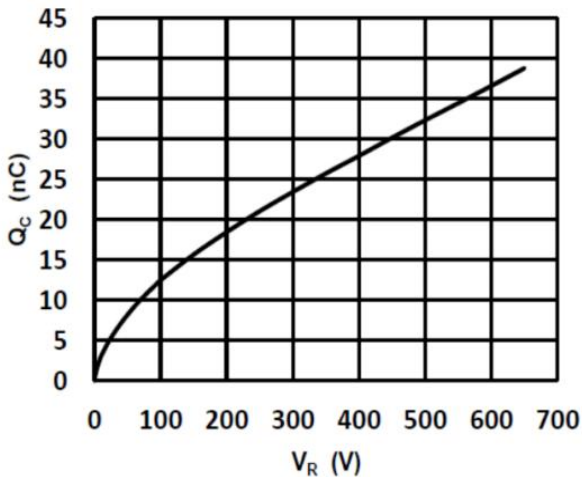


Figure 5. Typical reverse charge as function of reverse voltage

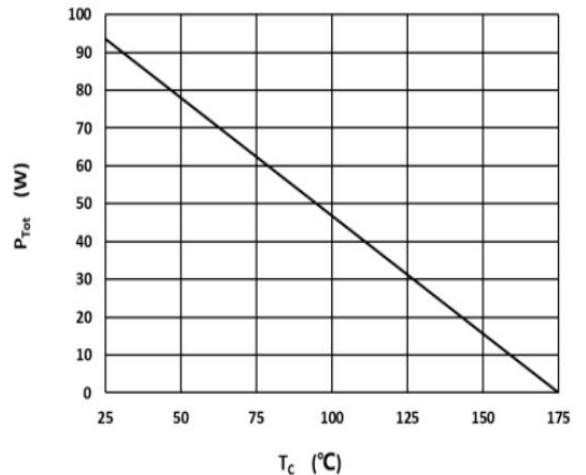


Figure 6. Power dissipation as function of case temperature

## Typical Performance

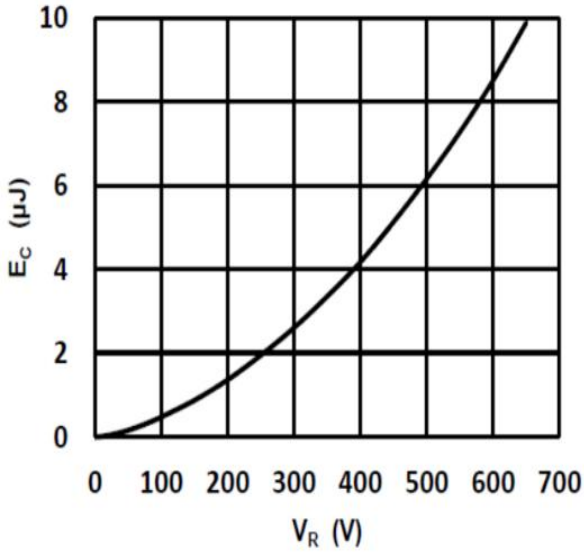


Figure 7. Capacitance stored energy

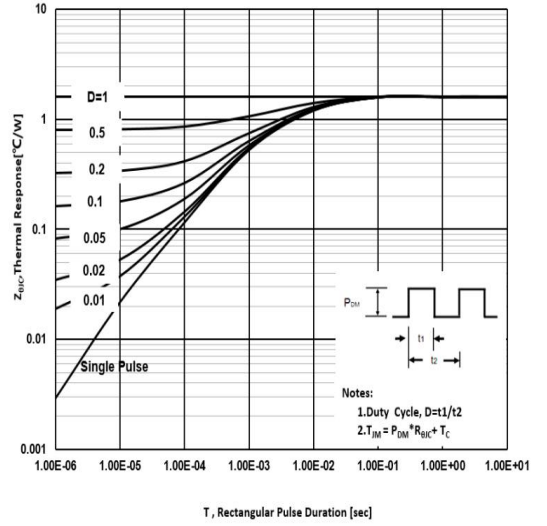
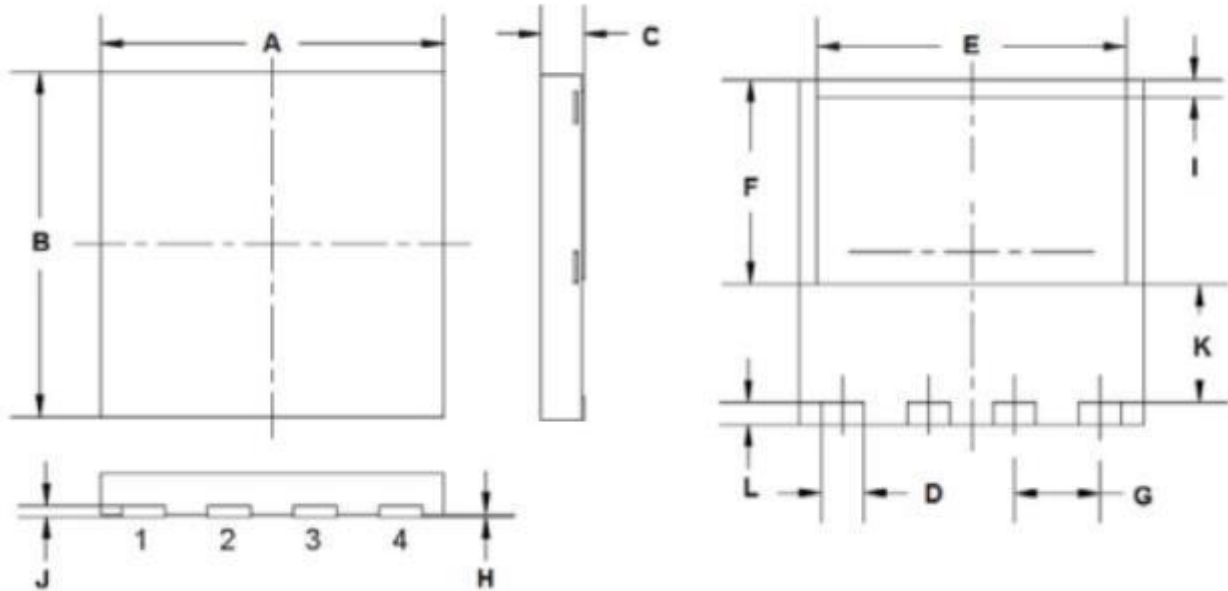


Figure 8. Max. transient thermal impedance

## Package Dimensions



Dimension	Min.	Max.
A	7.90	8.10
B	7.90	8.10
C	0.75	0.95
D	0.90	1.10
E	7.10	7.30
F	4.65	4.85
G	1.80	2.20
H	0.00	0.05
I	0.30	0.50
J	0.10	0.30
K	2.65	2.85
L	0.40	0.60