

Features

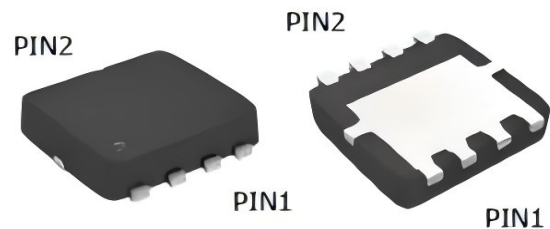
- Low reverse current
- Good surge current capability
- Low capacitive charge
- No reverse recovery current
- Halogen free, RoHs compliant

V_{RRM}	=	650	V
$I_F (T_C=152^{\circ}C)$	=	4	A
Q_C	=	15.6	nC

Benefits

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

Package



PDFN 5*6-8L

Applications

- Switch mode power supplies (SMPS)
- Uninterruptible power supplies
- PD Charger
- UPS



Part Number	Package	Marking
ASZD004065P56	PDFN5*6-8L	ZD004065

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	$T_C=25^{\circ}\text{C}$ $T_C=135^{\circ}\text{C}$ $T_C=152^{\circ}\text{C}$	13 6 4	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	29 23	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	48 44	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	11.5 9.7	A^2S
P_{tot}	Power dissipation	$T_C=25^{\circ}\text{C}$ $T_C=110^{\circ}\text{C}$	37 16	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	$I_F=4\text{A}$ $T_j=25^{\circ}\text{C}$ $I_F=4\text{A}$ $T_j=175^{\circ}\text{C}$		1.3 1.5	1.5	V
I_R	Reverse current	$V_R=650\text{V}$ $T_j=25^{\circ}\text{C}$ $V_R=650\text{V}$ $T_j=175^{\circ}\text{C}$		0.5 1	30 100	μA
Q_C	Total capacitive charge	$V_R=400\text{V}$ $T_j=25^{\circ}\text{C}$ $Q_C = \int_0^{V_R} C(V)dV$		15.6		nC
C	Total capacitance	$V_R=0\text{V}$ $f=1\text{MHz}$ $V_R=200\text{V}$ $f=1\text{MHz}$ $V_R=400\text{V}$ $f=1\text{MHz}$		273 31 24		pF

Thermal Characteristics

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
$R_{th(jc)}$	Thermal resistance from junction to case		4		$^{\circ}\text{C/W}$

Typical Performance

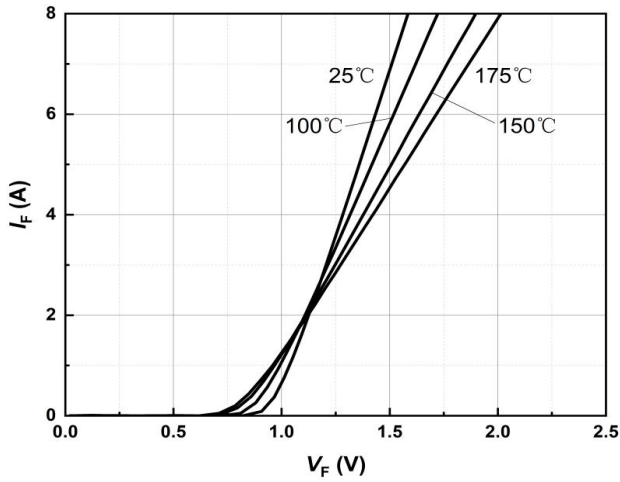


Figure 1. Typical forward characteristics

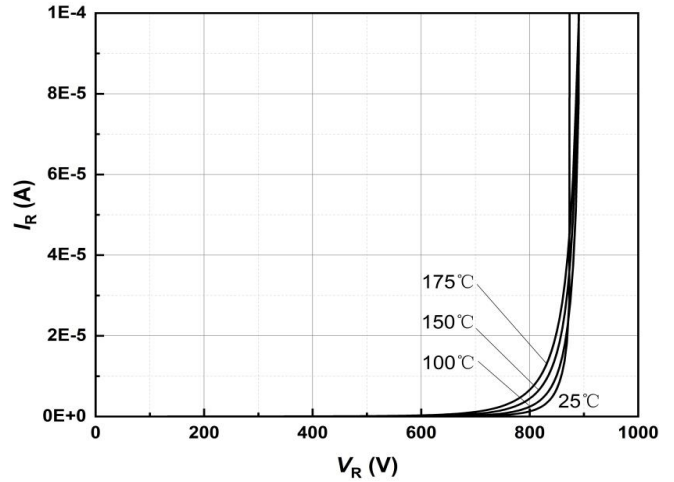


Figure 2. Typical reverse current as function of reverse voltage

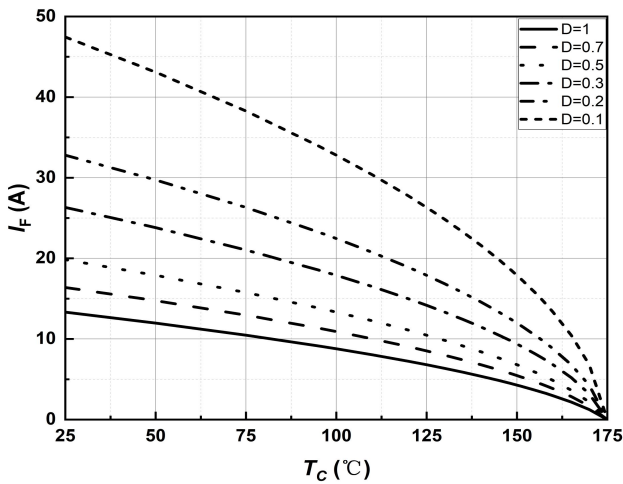


Figure 3. Diode forward current as function of temperature, D=duty cycle

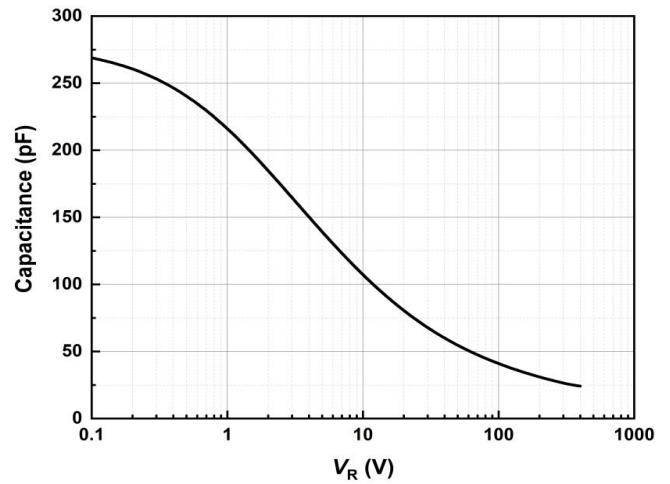


Figure 4. Typical capacitance as function of reverse voltage, $C=f(V_R)$; $T_J=25^\circ\text{C}$

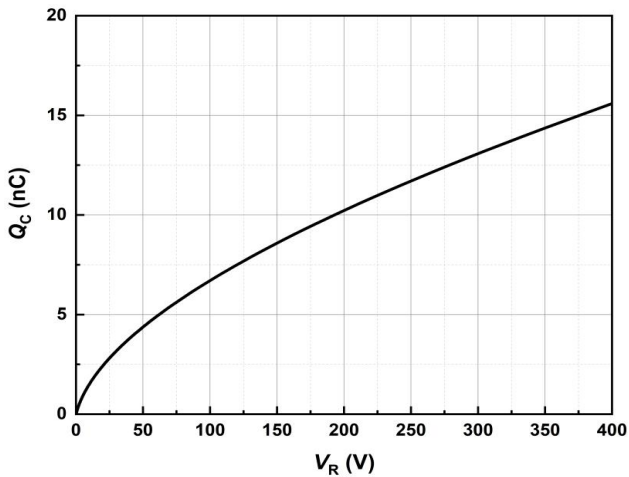


Figure 5. Typical reverse charge as function of reverse voltage

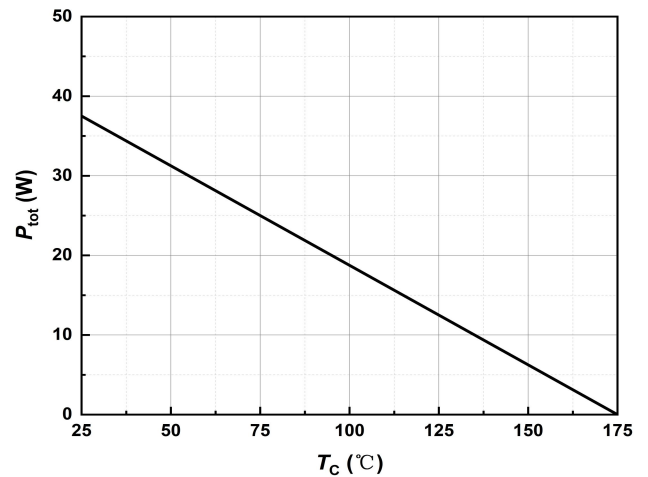


Figure 6. Power dissipation as function of case temperature

Typical Performance

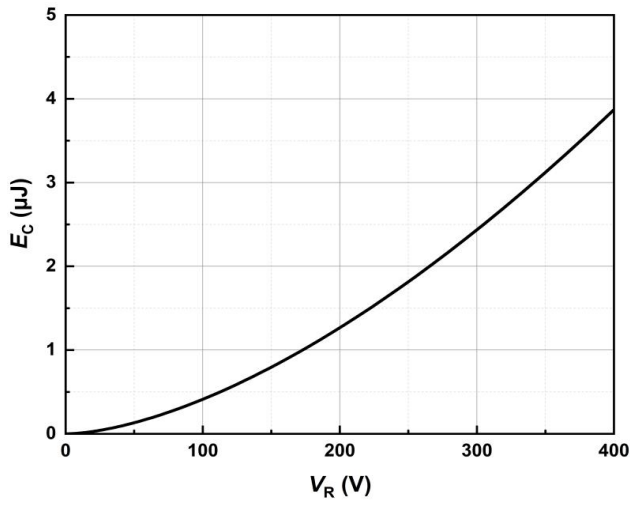


Figure 7. Capacitance stored energy

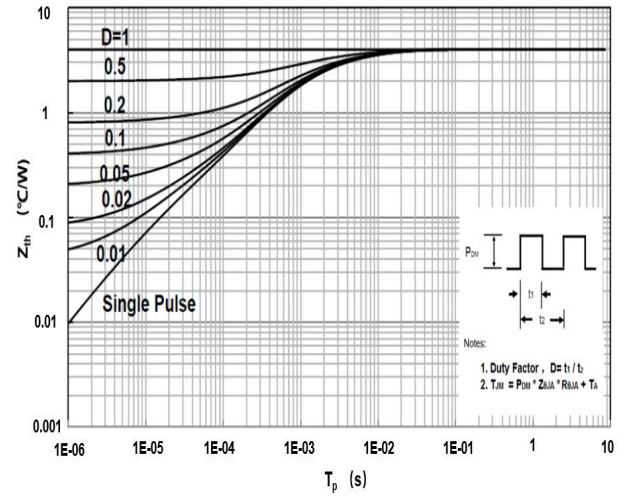
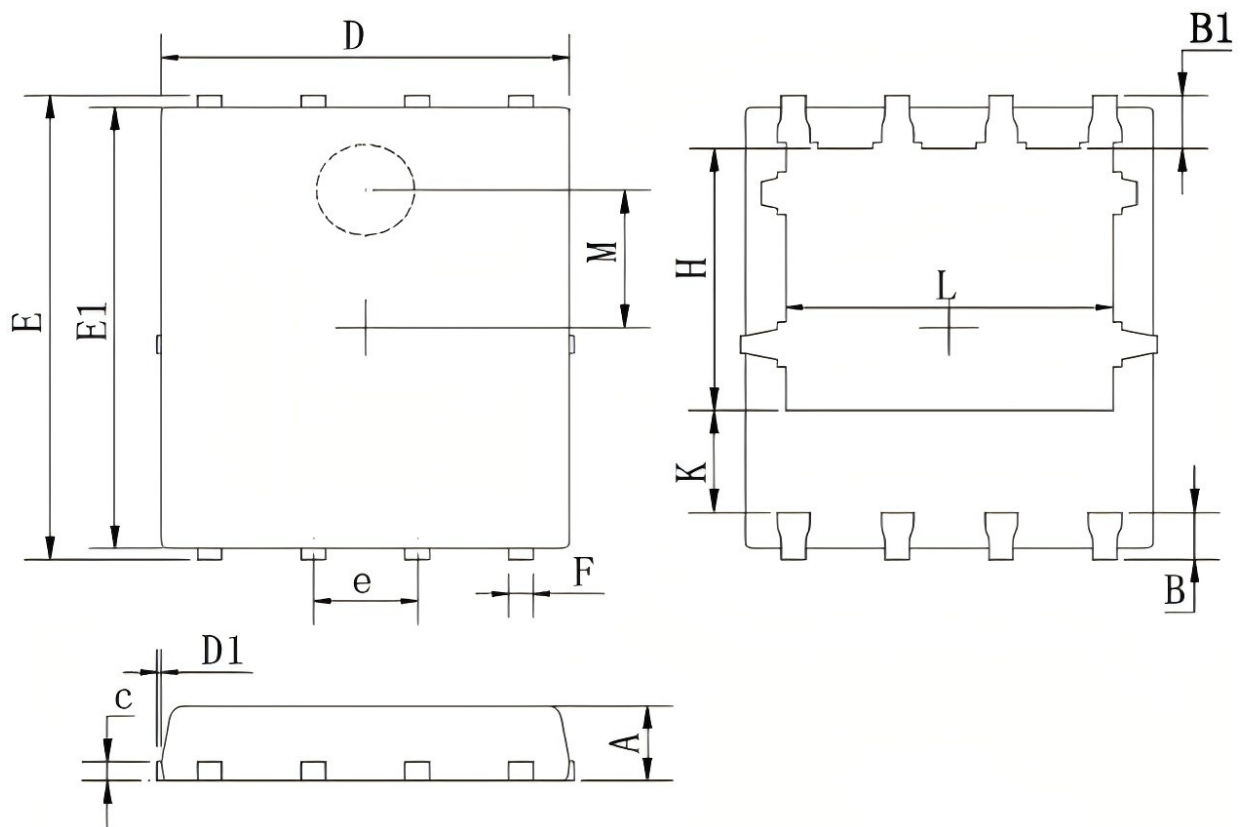


Figure 8. Max. transient thermal impedance

PDFN5*6-8L Package Dimensions



Symbol	Min	Typ	Max
A	0.90	1.00	1.10
B	0.53	0.63	0.73
B1	0.60	0.70	0.80
C	0.20	0.254	0.30
D	4.90	5.00	5.10
D1			0.05
E	6.05	6.15	6.25
E1	5.75	5.85	5.95
e	1.22	1.27	1.32
F	0.25	0.30	0.35
H	3.27	3.47	3.67
L	3.80	4.00	4.20
M	1.725	1.825	1.925
K	1.20		