

Features

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

V_{RRM}	=	650	V
$I_F (T_C=158^{\circ}C)$	=	2	A
Q_C	=	3.7	nC

Benefits

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

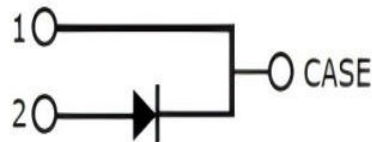
Package



TO-252-2

Applications

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



Part Number	Package	Marking
ASZD002065D	TO-252-2	ASZD002065D

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	$T_C=25^{\circ}\text{C}$ $T_C=135^{\circ}\text{C}$ $T_C=158^{\circ}\text{C}$	7.5 3.8 2	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	12 8	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	18 14	A
$\int i^2 dt$	$i^2 t$ 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	1.62 0.98	A^2S
P_{tot}	Power dissipation	$T_C=25^{\circ}\text{C}$ $T_C=110^{\circ}\text{C}$	34 14	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	$I_F=2\text{A}$ $T_j=25^{\circ}\text{C}$ $I_F=2\text{A}$ $T_j=175^{\circ}\text{C}$		1.3 1.5	1.5	V
I_R	Reverse current	$V_R=650\text{V}$ $T_j=25^{\circ}\text{C}$ $V_R=650\text{V}$ $T_j=175^{\circ}\text{C}$		10 40	50 150	μA
Q_C	Total capacitive charge	$V_R=400\text{V}$ $T_j=25^{\circ}\text{C}$ $Q_C = \int_0^{V_R} C(V) dV$		3.7		nC
C	Total capacitance	$V_R=0\text{V}$ $f=1\text{MHz}$ $V_R=200\text{V}$ $f=1\text{MHz}$ $V_R=400\text{V}$ $f=1\text{MHz}$		181 10 8		pF

Thermal Characteristics

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
$R_{th(jc)}$	Thermal resistance from junction to case		3.9		$^{\circ}\text{C/W}$

Typical Performance

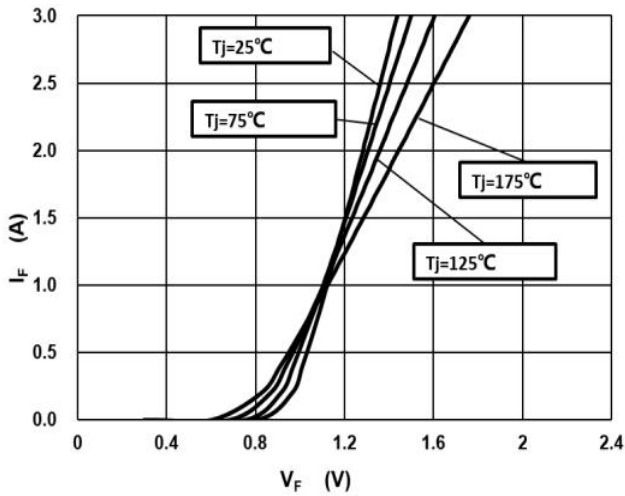


Figure 1. Typical forward characteristics

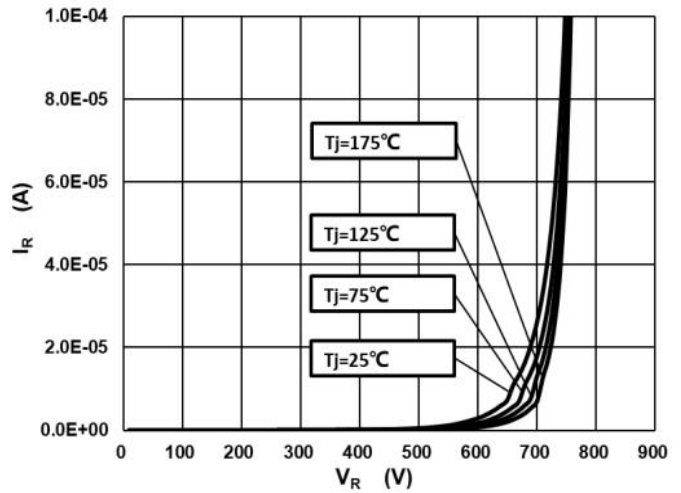


Figure 2. Typical reverse current as function of reverse voltage

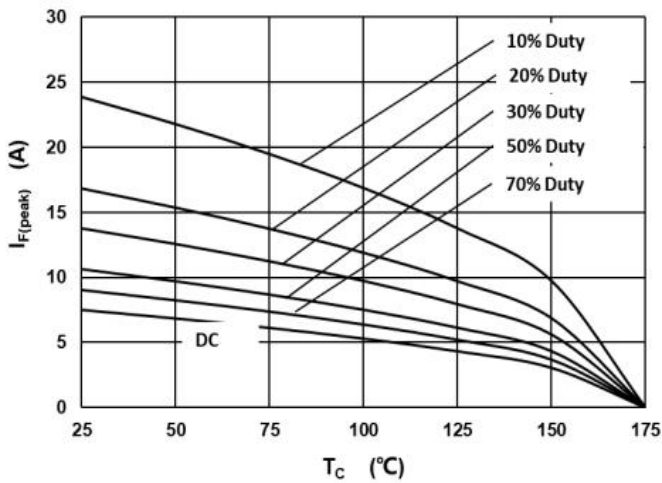


Figure 3. Diode forward current as function of temperature D=duty cycle

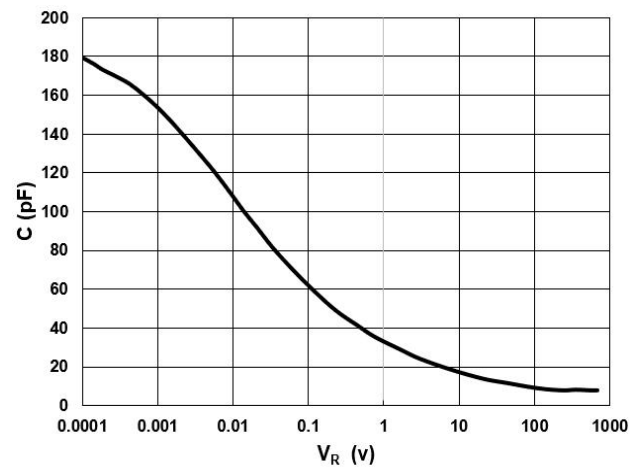


Figure 4. Typical capacitance as function of reverse voltage $C=f(V_R)$; $T_J=25^\circ\text{C}$

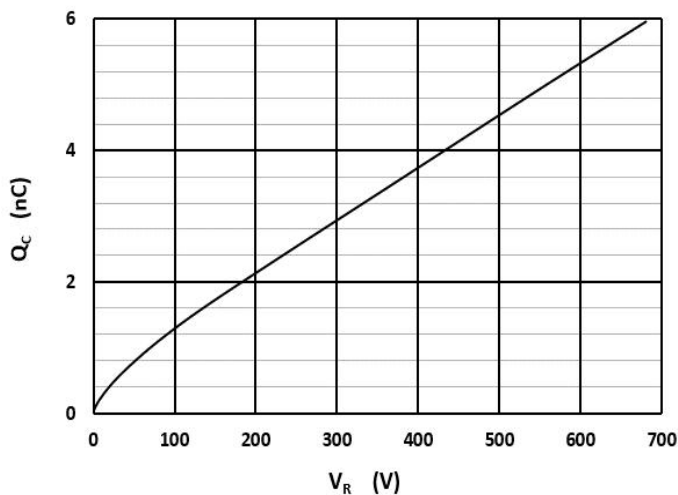


Figure 5. Typical reverse charge as function of reverse voltage

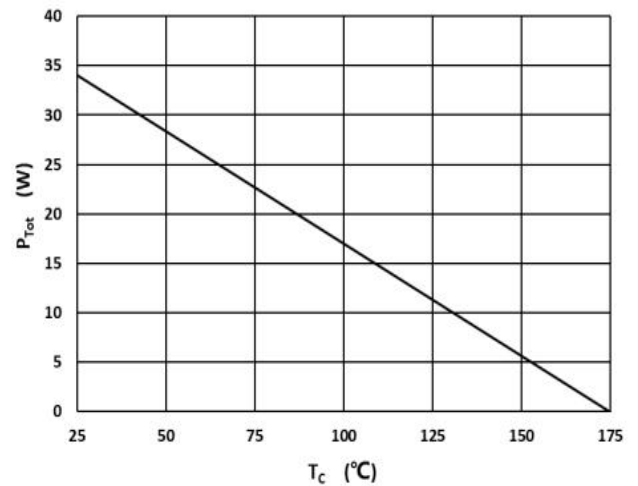


Figure 6. Power dissipation as function of case temperature

Typical Performance

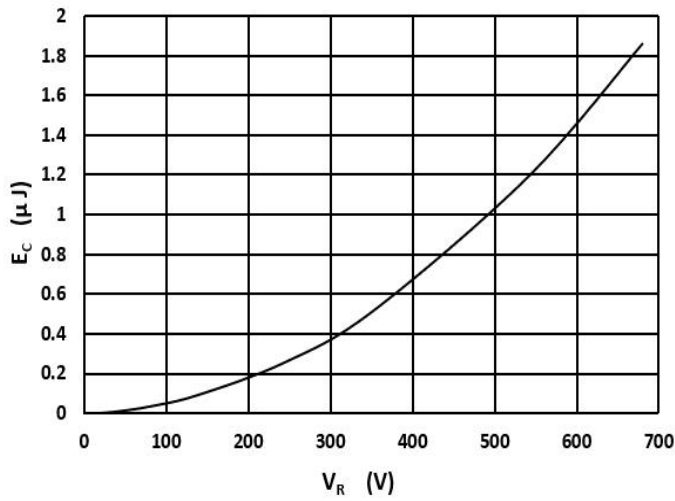


Figure 7. Capacitance stored energy

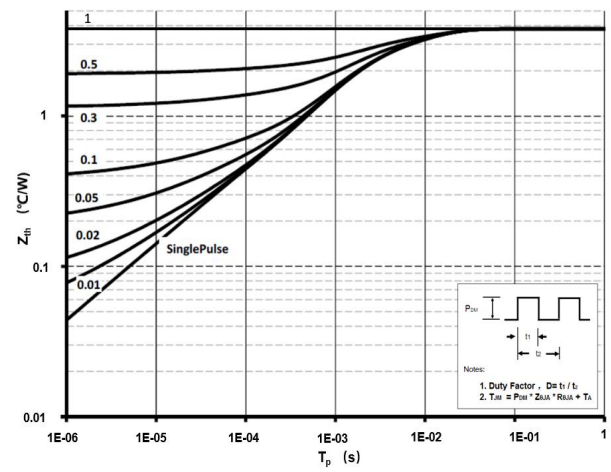
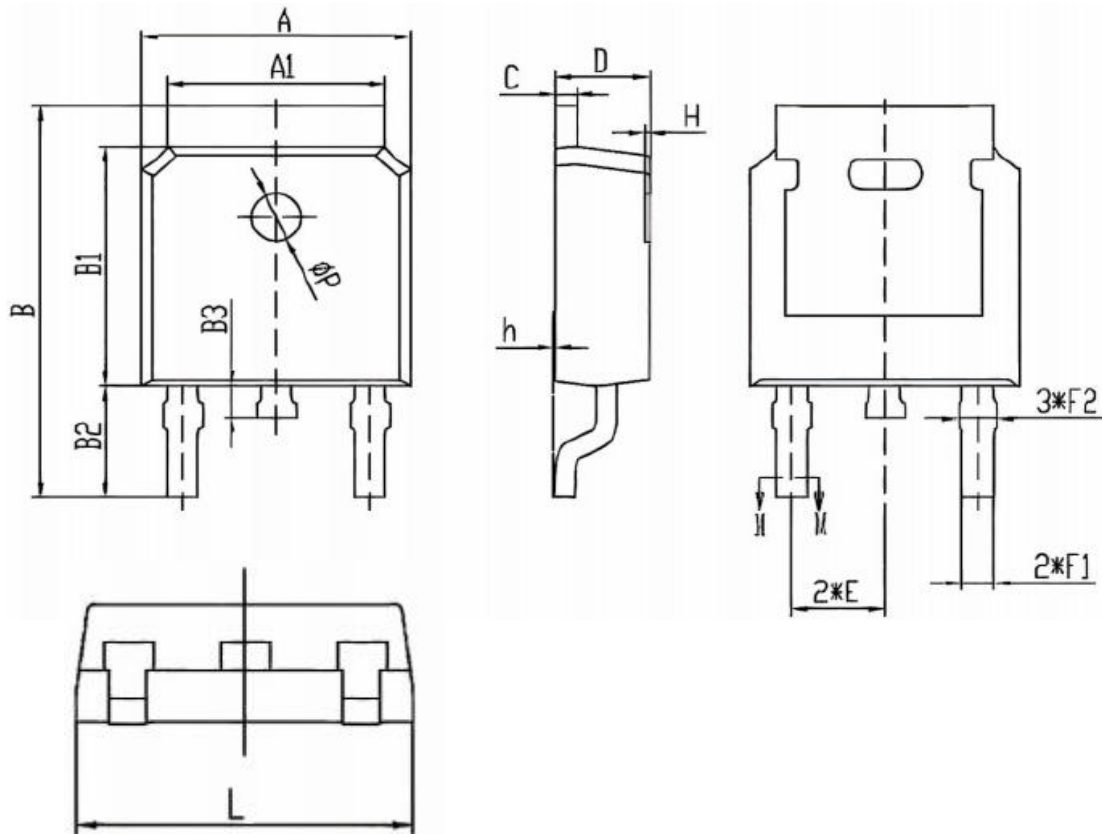


Figure 8. Max. transient thermal impedance

TO-252-2 Package Dimensions



Symbol	mm		Symbol	mm	
	Min.	Max.		Min.	Max.
A	6.500	6.700	E	2.186	2.386
A1	5.160	5.460	F1	0.670	0.870
B	9.770	10.170	F2	0.760	0.960
B1	6.000	6.200	H	0.000	0.300
B2	2.600	3.000	h	0.000	0.127
B3	0.700	0.900	L	6.500	6.700
C	0.450	0.610	φP	1.100	1.300
D	2.200	2.400			