

Features

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

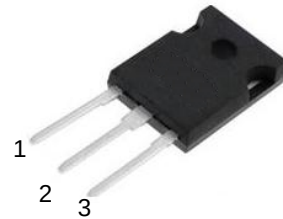
V_{RRM}	=	650	V
$I_F (T_C=148^{\circ}C)$	=	30	A**
Q_C	=	51	nC*

*Per Leg, **Per Device

Benefits

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

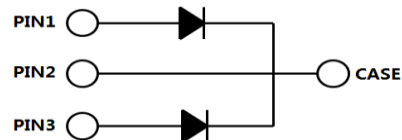
Package



TO-247-3

Applications

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



Part Number	Package	Marking
ASZD030065P2	TO-247-3	ASZD030065P2

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	$T_C=25^{\circ}\text{C}$ $T_C=135^{\circ}\text{C}$ $T_C=148^{\circ}\text{C}$	45*/90** 20*/40** 15*/30**	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	70* 56*	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	128* 98*	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	81* 48*	A ² S
P_{tot}	Power dissipation	$T_C=25^{\circ}\text{C}$ $T_C=110^{\circ}\text{C}$	125*/250** 54*/108**	W
T_j	Operating junction temperature		-55~175	$^{\circ}\text{C}$
T_{stg}	Storage temperature		-55~175	$^{\circ}\text{C}$

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	$I_F=15\text{A}$ $T_j=25^{\circ}\text{C}$ $I_F=15\text{A}$ $T_j=175^{\circ}\text{C}$		1.3* 1.5*	1.5*	V
I_R	Reverse current	$V_R=650\text{V}$ $T_j=25^{\circ}\text{C}$ $V_R=650\text{V}$ $T_j=175^{\circ}\text{C}$		1.5* 3.0*	100* 200*	μA
Q_C	Total capacitive charge	$V_R=400\text{V}$ $T_j=25^{\circ}\text{C}$ $Q_C = \int_0^{V_R} C(V)dV$		51*		nC
C	Total capacitance	$V_R=0\text{V}$ $f=1\text{MHz}$ $V_R=200\text{V}$ $f=1\text{MHz}$ $V_R=400\text{V}$ $f=1\text{MHz}$		1006* 98* 77*		pF

Thermal Characteristics

Symbol	Parameter	Value			Unit
		Min.	Typ.	Max.	
$R_{th(jc)}$	Thermal resistance from junction to case		1.20*/0.60**		$^{\circ}\text{C/W}$

*Per Leg, **Per Device

Typical Performance (Per Leg)

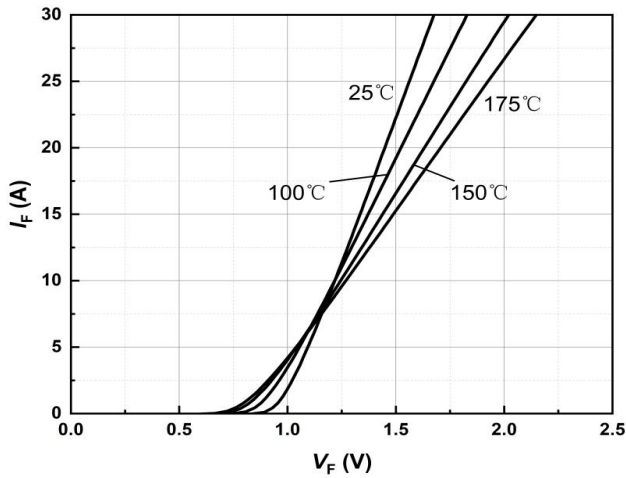


Figure 1. Typical forward characteristics

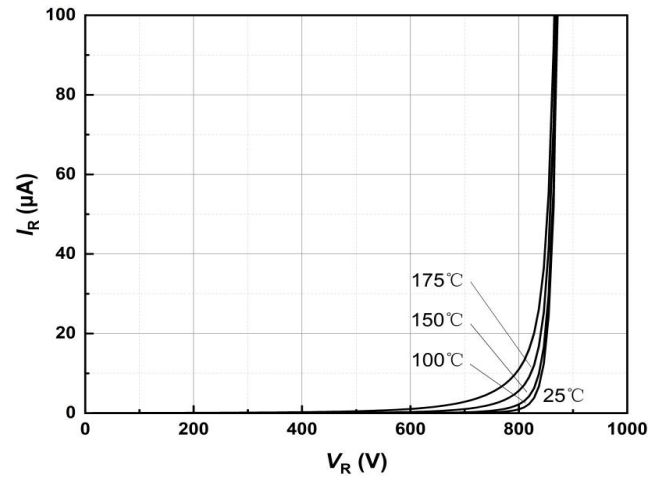


Figure 2. Typical reverse current as function of reverse voltage

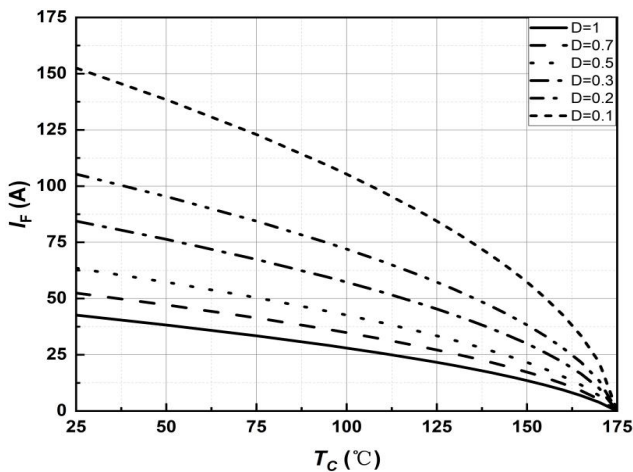


Figure 3. Diode forward current as function of temperature, D=duty cycle

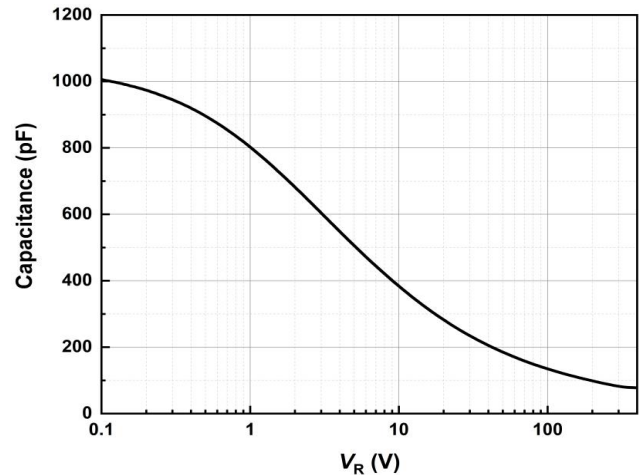


Figure 4. Typical capacitance as function of reverse voltage, $C=f(V_R)$; $T_J=25^\circ\text{C}$

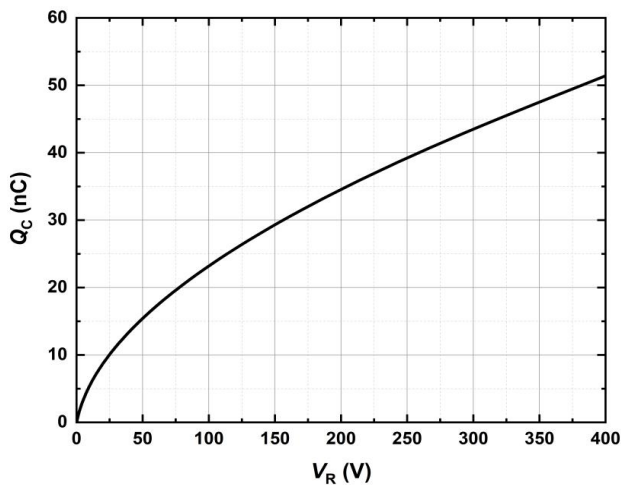


Figure 5. Typical reverse charge as function of reverse voltage

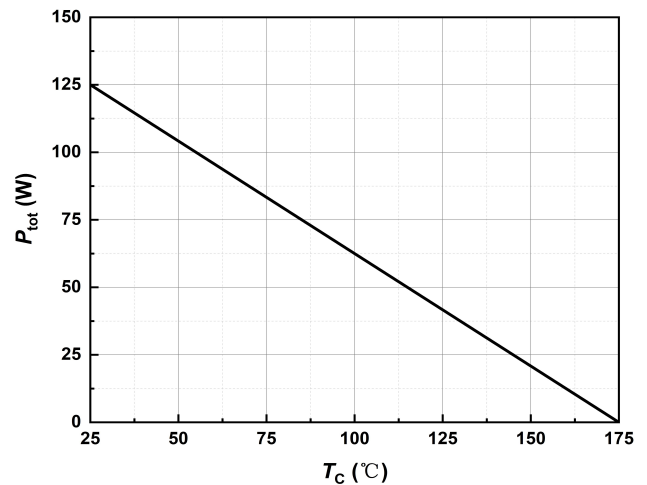


Figure 6. Power dissipation as function of case temperature

Typical Performance (Per Leg)

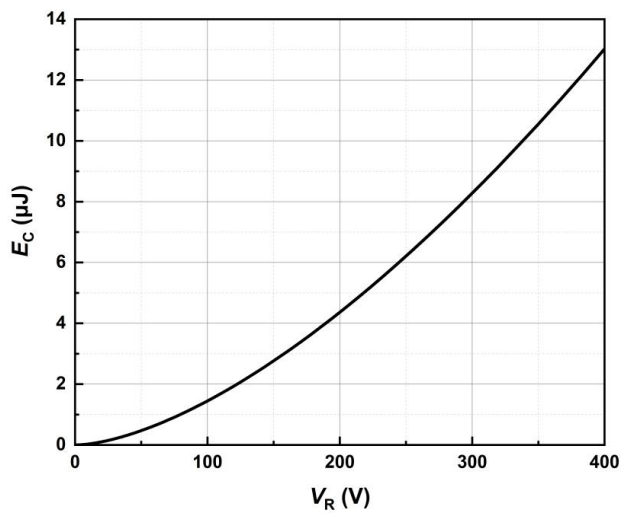


Figure 7. Capacitance stored energy

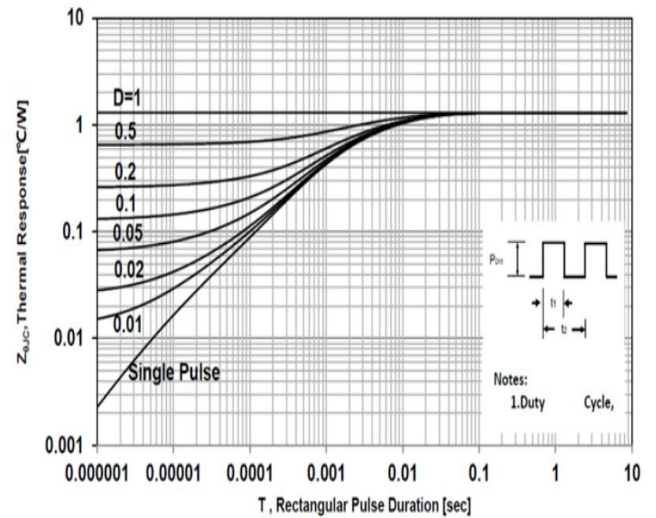
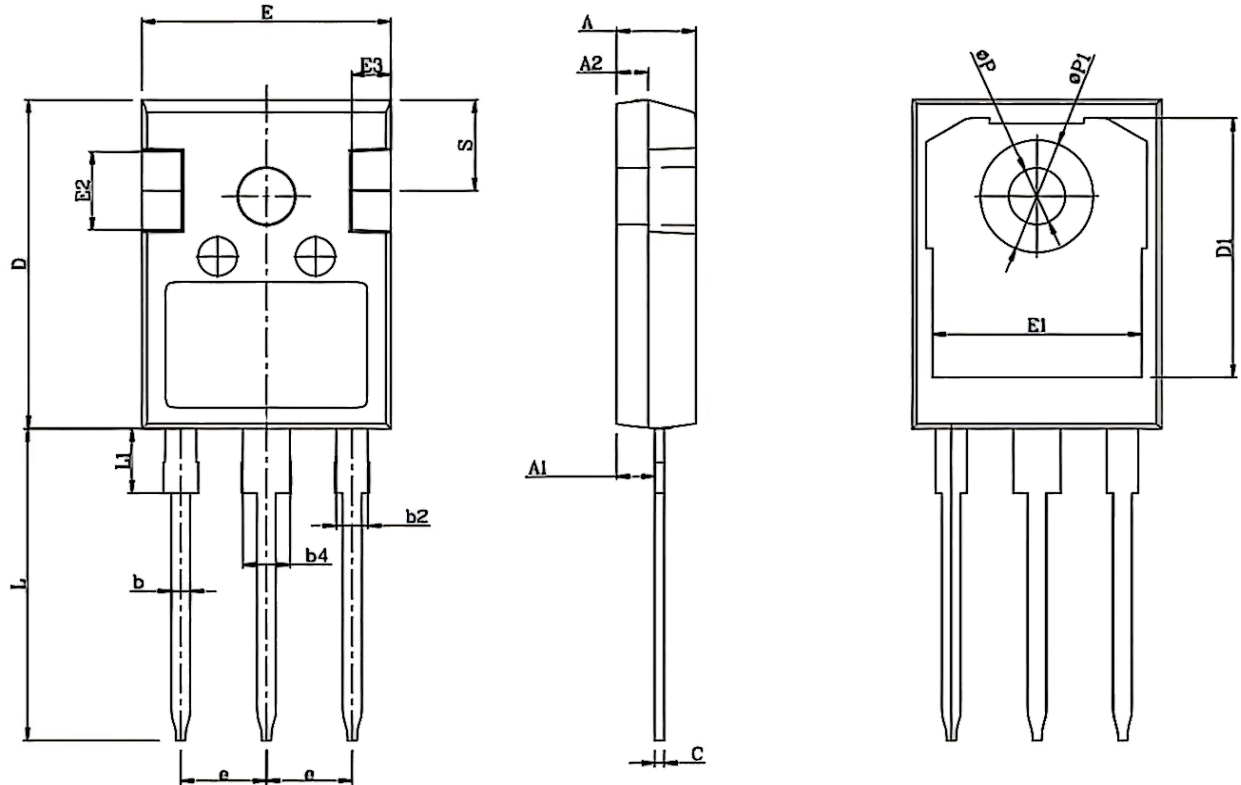


Figure 8. Max. transient thermal impedance

TO-247-3 Package Dimensions



SYMBOL	mm		SYMBOL	mm	
	Min	Max		Min	Max
A	4.85	5.15	E1	13.11	13.51
A1	2.26	2.56	E2	4.85	5.15
A2	1.90	2.10	E3	2.35	2.65
b	1.15	1.30	e	5.39	5.49
b2	1.95	2.10	L	19.71	20.11
b4	3.00	3.20	L1	4.02	4.22
c	0.55	0.70	φP	3.45	3.75
D	20.80	21.20	φP1	7.00	7.40
D1	16.35	16.75	S	6.00	6.30
E	15.65	15.95			