



#### **Features:**

- 650V Schottky Diode
- Zero Reverse Recovery Current
- High Frequency Operation
- Positive Temperature Coefficient
- Temperature independent Switching

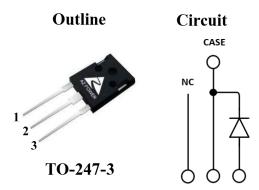
# **Benefits:**

- Unipolar Rectifier
- Minimal switching loss
- Higher Efficiency
- Low cooling requirement

Symbol	Value	Unit		
$\mathbf{V}_{\mathbf{RRM}}$	650	V		
$I_F \; (T_c \!=\! 156^{\circ}\!C)$	15	A		
$\mathbf{Q}_{\mathbf{C}}$	34	пC		

# **Applications:**

- Switch Mode Power Supply
- Booster diodes in PFC, DC/DC
- AC/DC converters



#### **Maximum Ratings**

Symbol	Parameter	Value	Unit	Test Conditions
$V_R$	DC Peak Reverse Voltage	650	V	$T_J = 25^{\circ}C$
V <sub>RRM</sub>	Repetitive Peak Reverse	650	V	$T_J = 25^{\circ}C$
V <sub>RSM</sub>	Surge Peak Reverse Voltage	650	V	$T_J = 25^{\circ}C$
$I_{\mathrm{F}}$	Continuous Forward Current	53 25 15	A	$T_{\rm C} = 25^{\circ}{\rm C}$ $T_{\rm C} = 135^{\circ}{\rm C}$ $T_{\rm C} = 156^{\circ}{\rm C}$
I <sub>FRM</sub>	Repetitive Peak Forward Surge Current	91 81	A	$T_C = 25^{\circ}\text{C}$ , $T_P = 10\text{ms}$ , Half Sine Wave $Tc = 110^{\circ}\text{C}$ , $T_P = 10\text{ms}$ , Half Sine Wave
I <sub>FSM</sub>	Non-Repetitive Peak Forward Surge Current	120 109	A	$T_{\rm C}=25^{\circ}{\rm C}, T_{\rm P}=10{\rm ms},$ Half Sine Wave $T_{\rm C}=110^{\circ}{\rm C}, T_{\rm P}=10{\rm ms},$ Half Sine Wave
P <sub>D</sub>	Power Dissipation	227 98	W	$T_{\rm C} = 25^{\circ}{\rm C}$ $T_{\rm C} = 110^{\circ}{\rm C}$
T <sub>J,max</sub>	Operating Junction Temperature	175	°C	
T <sub>stg</sub>	Storage Temperature Range	-55 to 175	°C	

S4D065V015S, Rev. 1.0 Page 1 of 4



#### Thermal characteristics

Symbol	Parameter	Min.	Тур.	Max.	Unit
$ m R_{thJC}$	Thermal resistance		0.66		°C/W

#### **Electrical Characteristics**

Crymah al	Symbol Parameter	Value		Unit	Total Constitutions	
Symbol		Min.	Тур.	Max.	Unit	Test Conditions
V <sub>DC</sub>	DC Blocking Voltage	650			V	$I_R = 100 \mu A, T_J = 25^{\circ} C$
$\mathbf{V_F}$	Forward Voltage		1.45	1.7	V	$I_F = 15A, T_J = 25^{\circ}C$
V F	rotward voltage		1.8	2.1	V	$I_F = 15A, T_J = 175^{\circ}C$
$I_R$	Reverse Current		5	100	μА	$V_R = 650V, T_J = 25^{\circ}C$
IR	Reverse Current		10	200		$V_R = 650V, T_J = 175^{\circ}C$
0	Total Campaitive Change		34		пC	$I_F = 15A$ , $dI/dt = 350A/\mu s$
$\mathbf{Q}_{\mathrm{C}}$	Total Capacitive Charge		34		nc	$T_J = 25^{\circ}C, V_R = 400V$
			644			$V_R = 1V, T_J = 25^{\circ}C, f = 1 \text{ MHz}$
C	Total Capacitance		88		pF	$V_R = 200V, T_J = 25^{\circ}C, f = 1 \text{ MHz}$
			85			$V_R = 400V, T_J = 25^{\circ}C, f = 1 \text{ MHz}$

#### **Typical Performance**

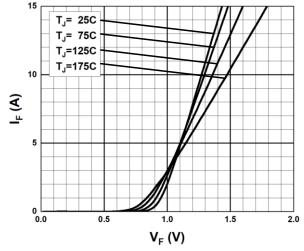


Fig. 1 Forward Characteristics

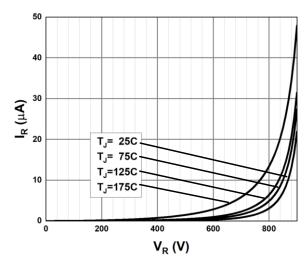
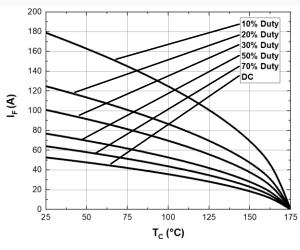


Fig. 2 Reverse Characteristics

S4D065V015S, Rev. 1.0 Page 2 of 4



### **Typical Performance**



250 200 200 150 50 25 50 75 100 125 150 175 T<sub>C</sub> (°C)

Fig. 3 Current Derating

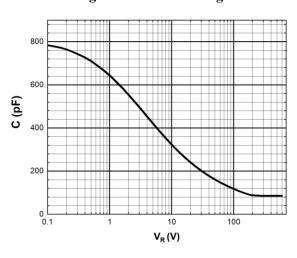


Fig. 4 Power Derating

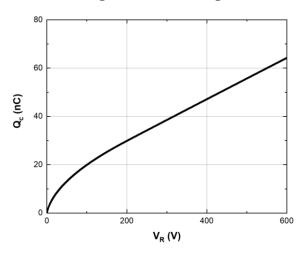


Fig. 5 Capacitance vs. Reverse Voltage

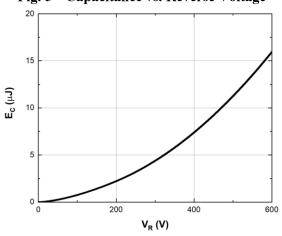


Fig. 6 Recovery Charge vs. Reverse Voltage

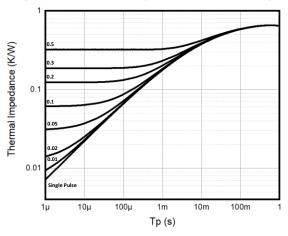


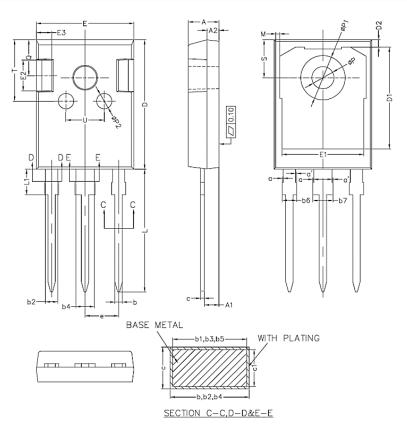
Fig. 7 Capacitance stored Energy

Fig. 8 Thermal Impendance

S4D065V015S, Rev. 1.0 Page 3 of 4



#### **Package** TO-247-3 (Unit: mm)



COMMON DIMENSIONS (UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX		
Α	4.90	5.00	5.10		
A1	2.31	2.41	2.51		
A2	1.90	2.00	2.10		
a	0	1	0.15		
a'	0	_	0.15		
b	1.16	_	1.26		
b1	1.15	1.2	1.22		
b2	1.96	_	2.06		
b3	1.95	2.00	2.02		
b4	2.96	-	3.06		
b5	2.95	3.00	3.02		
b6	-	-	2.25		
b7	_	_	3.25		
С	0.59	-	0.66		
c1	0.58	0.60	0.62		
D	20.90	21.00	21.10		
D1	16.25	16.55	16.85		
D2	1.05	1.20	1.35		
E	15.70	15.80	15.90		
E1	13.10	13.30	13.50		
E2	4.90	5.00	5.10		
E3	2.40	2.50	2.60		
е	5.34	5.44	5.54		
L	19.80	19.92	20.10		
L1	_	-	4.30		
M	0.35	_	0.95		
P	3.50	3.60	3.70		
P1	7.00	_	7.40		
P2	2.40	2.50	2.60		
Q	5.60	-	6.00		
S	6.05	6.15	6.25		
T	9.80	-	10.20		
U	6.00	_	6.40		
NS REFER TO JEDEC STANDARD					

NOTES: U 6.00 
1.ALL DIMENSIONS REFER TO JEDEC STANDAR
TO-247 AD DO NOT INCLUDE MOLD FLASH
OR PROTRUSIONS.
2.EJECTION MARK DEPTH 0.10±0.05

This Product has not been designed or tested for use in, and is not intended for use in, applications implanted into the human body nor in applications in which failure of the product could lead to death, personal injury or property damage, including but not limited to equipment used in the operation of nuclear facilities, life-support machines, systems, or air-traffic control systems.

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, AZ Power Inc. disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.



**5601 W SLAUSON AVE 190 CULVER CITY, CA 90230** WWW.AZPE.COM

Information in this document may change without notice. All referenced product or service names and trademarks are the property of their respective owners. Copyright © 2022 AZ Power Inc. All rights reserved.

S4D065V015S, Rev. 1.0 Page 4 of 4

## 单击下面可查看定价,库存,交付和生命周期等信息

>>HyCore(海科)