

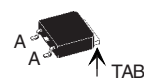
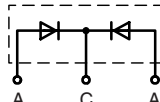
Gallium Arsenide Schottky Rectifier

Second generation

$$V_{RRM} = 180 \text{ V}$$

$$I_{DC} = 24 \text{ A}$$

$$C_{Junction} = 21 \text{ pF}$$

Type	Marking on product	Circuit	Package
DGS 15-018CS	15A180AS	Single 	TO-252 AA 
DGSK 32-018CS	DGSK 32-018CS	Common cathode 	TO-263 AB  A = Anode, TAB = Cathode

Diode					
Symbol	Conditions	Maximum Ratings			
$V_{RRM/RSM}$		180		V	
I_{FAV}	$T_C = 25^\circ\text{C}; \text{DC}$	24		A	
I_{FAV}	$T_C = 90^\circ\text{C}; \text{DC}$	15		A	
I_{FSM}	$T_{VJ} = 45^\circ\text{C}; t_p = 10 \text{ ms (50 Hz), sine}$	80		A	
P_{tot}	$T_C = 25^\circ\text{C}$	34		W	
Symbol	Conditions	Characteristic Values			
		min.	typ.	max.	
V_F	$I_F = 7.5 \text{ A}; T_{VJ} = 25^\circ\text{C}$	1.25		1.5	V
	$I_F = 7.5 \text{ A}; T_{VJ} = 125^\circ\text{C}$		1.0		V
I_R	$V_R = V_{RRM}; T_{VJ} = 25^\circ\text{C}$			0.25	mA
	$V_R = V_{RRM}; T_{VJ} = 125^\circ\text{C}$		0.25		mA
I_{RM}	$I_F = 5 \text{ A}; -di_F/dt = 150 \text{ A}/\mu\text{s};$ $V_R = 100 \text{ V}; T_{VJ} = 125^\circ\text{C}$	1.1			A
t_{rr}		23			ns
C_J	$V_R = 100 \text{ V}; T_{VJ} = 125^\circ\text{C}$	21			pF
R_{thJC}				4.4	K/W

Data according to IEC 60747 and per diode unless otherwise specified

Component					
Symbol	Conditions	Maximum Ratings			
T_{VJ}		-55...+175		$^\circ\text{C}$	
T_{stg}		-55...+150		$^\circ\text{C}$	
Symbol	Conditions	Characteristic Values			
		min.	typ.	max.	
Weight	TO-252	0.3			g
	TO-263	2			g

IXYS reserves the right to change limits, Conditions and dimensions.

Features

GaAs Schottky Diode with Enhanced Barrier Height:

- lowest operating forward voltage drop due to additional injection of minority carriers
- high switching speed
 - low junction capacity of GaAs diode independent from temperature
 - short and low reverse recovery current peak due to short lifetime of minority carriers
 - soft turn off

Surface Mount Packages:

- Incorporating Single and Dual Diode Topologies
- Industry Standard Package Outlines
- Epoxy meets UL 94V-0

Applications

Switched Mode Power Supplies:

- AC-DC converters
 - DC-DC converters
- with:*
- high switching frequency
 - high efficiency
 - low EMI
- for use e. g. in:*
- telecom
 - computer
 - automotive equipment

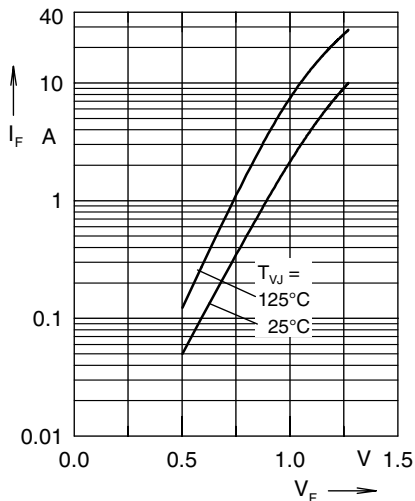


Fig. 1 typ. forward characteristics

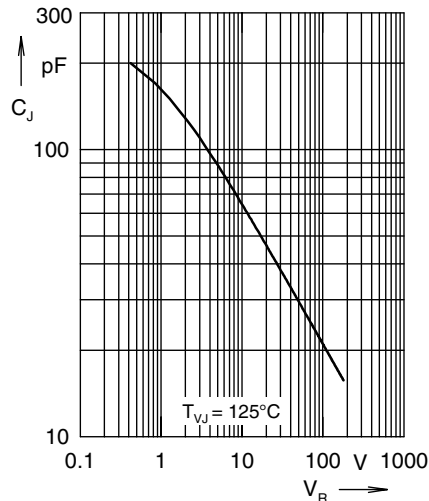


Fig. 2 typ. junction capacity versus blocking voltage

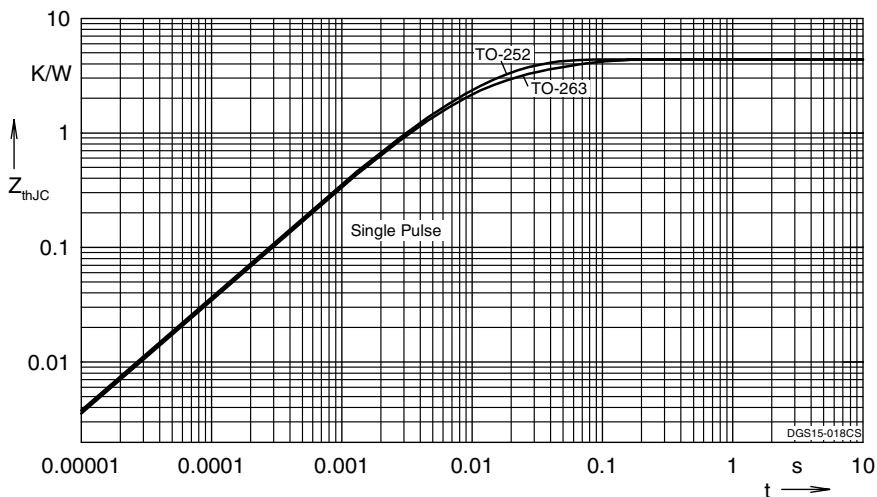
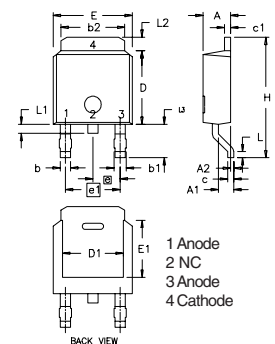


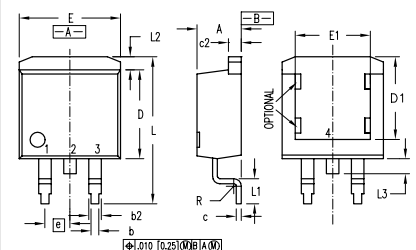
Fig. 3 typ. thermal impedance junction to case

Outlines TO-252 AA



Dim.	Millimeter	Inches
	Min. Max.	Min. Max.
A	2.19 2.38	0.086 0.094
A1	0.89 1.14	0.035 0.045
A2	0 0.13	0 0.005
b	0.64 0.89	0.025 0.035
b1	0.76 1.14	0.030 0.045
b2	5.21 5.46	0.205 0.215
c	0.46 0.58	0.018 0.023
c1	0.46 0.58	0.018 0.023
D	5.97 6.22	0.235 0.245
D1	4.32 5.21	0.170 0.205
E	6.35 6.73	0.250 0.265
E1	4.32 5.21	0.170 0.205
e	2.28 BSC	0.090 BSC
e1	4.57 BSC	0.180 BSC
H	9.40 10.42	0.370 0.410
L	0.51 1.02	0.020 0.040
L1	0.64 1.02	0.025 0.040
L2	0.89 1.27	0.035 0.050
L3	2.54 2.92	0.100 0.115

Outlines TO-263 AB



1. Gate
2. Collector
3. Emitter
4. Collector

Dim.	Millimeter	Inches
	Min. Max.	Min. Max.
A	4.06 4.83	.160 .190
A1	2.03 2.79	.080 .110
b	0.51 0.99	.020 .039
b2	1.14 1.40	.045 .055
c	0.46 0.74	.018 .029
c2	1.14 1.40	.045 .055
D	8.64 9.65	.340 .380
D1	8.00 8.89	.315 .350
E	9.65 10.29	.380 .405
E1	6.22 8.13	.245 .320
e	2.54 BSC	.100 BSC
L	14.61 15.88	.575 .625
L1	2.29 2.79	.090 .110
L2	1.02 1.40	.040 .055
L3	1.27 1.78	.050 .070
L4	0 0.20	0 .008
R	0.46 0.74	.018 .029

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