

# Gallium Arsenide Schottky Rectifier

 $I_{FAV} = 11 \text{ A}$   
 $V_{RRM} = 300 \text{ V}$   
 $C_{Junction} = 9 \text{ pF}$ 

Type	Marking on product	Circuit	Package
DGS 9-03AS	9A300AS		TO-252 AA
DGS 10-03A	DGS 10-03A		TO-220 AC

A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	
$V_{RRM/RSM}$		300	V
$I_{FAV}$	$T_C = 25^\circ\text{C}$ ; DC	11	A
$I_{FAV}$	$T_C = 90^\circ\text{C}$ ; DC	8	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine	20	A
$T_{VJ}$		-55...+175	$^\circ\text{C}$
$T_{stg}$		-55...+150	$^\circ\text{C}$
$P_{tot}$	$T_C = 25^\circ\text{C}$	34	W
$M_d$	mounting torque (TO-220)	0.4...0.6	Nm

## Features

- Low forward voltage
- Very high switching speed
- Low junction capacity of GaAs  
- low reverse current peak at turn off
- Soft turn off
- Temperature independent switching behaviour
- High temperature operation capability
- Epoxy meets UL 94V-0

## Applications

- MHz switched mode power supplies (SMPs)
- Small size SMPs
- High frequency converters
- Resonant converters

Symbol	Conditions	Characteristic Values	
		typ.	max.
$I_R$ ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 125^\circ\text{C}$ $V_R = V_{RRM}$	1.3	1.3 mA mA
$V_F$	$I_F = 5 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$ $I_F = 5 \text{ A}$ ; $T_{VJ} = 25^\circ\text{C}$	1.6	1.6 V 2 V
$C_J$	$V_R = 150 \text{ V}$ ; $T_{VJ} = 125^\circ\text{C}$	9	pF
$R_{thJC}$		4.4	K/W
$R_{thCH}$	TO-220	0.5	K/W
Weight	TO-252	0.3	g
	TO-220	2	g

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %

Data according to IEC 60747 and per diode unless otherwise specified

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

© 2004 IXYS All rights reserved

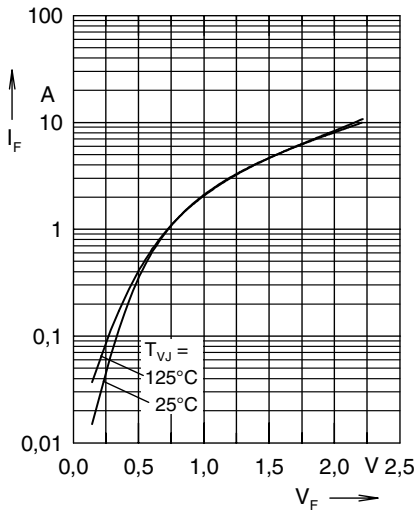


Fig. 1 typ. forward characteristics

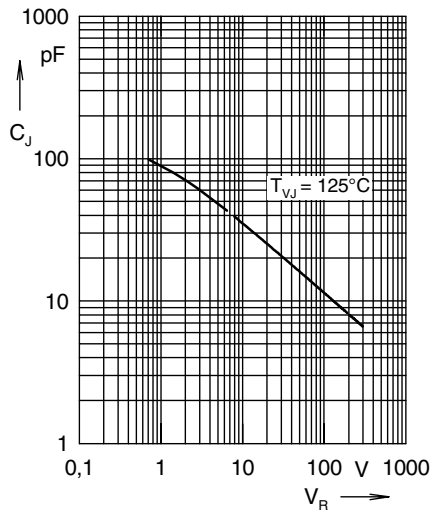


Fig. 2 typ. junction capacity versus blocking voltage

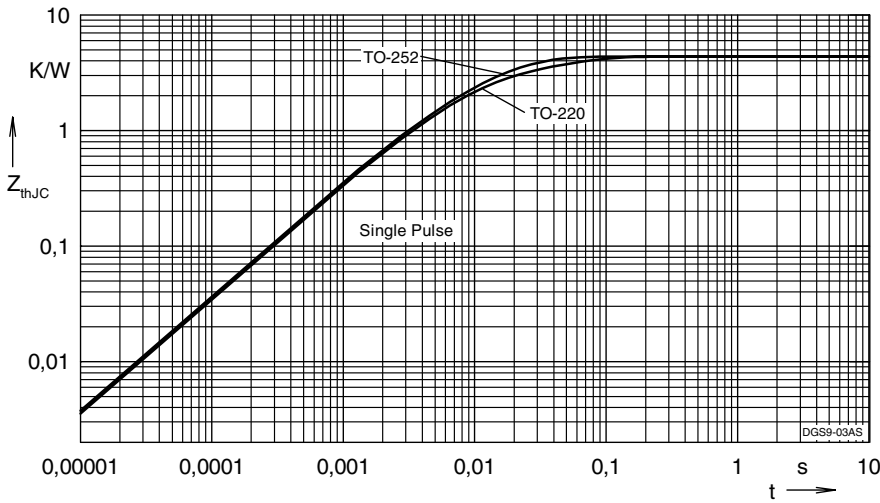
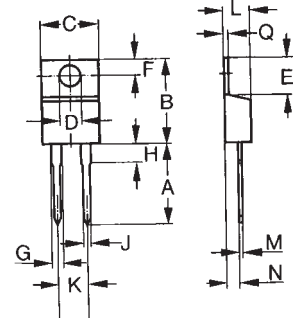


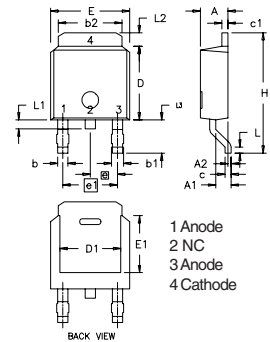
Fig. 3 typ. thermal impedance junction to case

### Outlines TO-220 AC



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	14.73	0.500	0.580
B	14.23	16.51	0.560	0.650
C	9.66	10.66	0.380	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	2.300	0.420
F	2.54	3.42	0.100	0.135
G	1.15	1.77	0.045	0.070
H	-	6.35	-	0.250
J	0.64	0.89	0.025	0.035
K	4.83	5.33	0.190	0.210
L	3.56	4.82	0.140	0.190
M	0.51	0.76	0.020	0.030
N	2.04	2.49	0.080	0.115
Q	0.64	1.39	0.025	0.055

### 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