

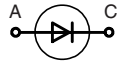

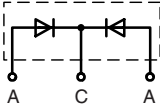

# Gallium Arsenide Schottky Rectifier

## Second generation

$$V_{RRM} = 250 \text{ V}$$

$$I_{DC} = 31 \text{ A}$$

$$C_{Junction} = 24 \text{ pF}$$

Type	Marking on product	Circuit	Package
DGS 19-025CS	19A250AS	Single 	TO-252 AA 
DGSK 40-025CS	DGSK 40-025CS	Common cathode 	TO-263 AB  A = Anode, TAB = Cathode

Diode				
Symbol	Conditions	Maximum Ratings		
$V_{RRM/RSM}$		250	V	
$I_{FAV}$	$T_C = 25^\circ\text{C}; \text{DC}$	31	A	
$I_{FAV}$	$T_C = 90^\circ\text{C}; \text{DC}$	20	A	
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}; t_p = 10 \text{ ms (50 Hz), sine}$	110	A	
$P_{tot}$	$T_C = 25^\circ\text{C}$	48	W	
Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
$V_F$	$I_F = 10 \text{ A}; T_{VJ} = 25^\circ\text{C}$	1.25	1.5	V
	$I_F = 10 \text{ A}; T_{VJ} = 125^\circ\text{C}$	1.1		V
$I_R$	$V_R = V_{RRM}; T_{VJ} = 25^\circ\text{C}$		0.4	mA
	$V_R = V_{RRM}; T_{VJ} = 125^\circ\text{C}$	0.4		mA
$I_{RM}$	$I_F = 8 \text{ A}; -di_F/dt = 200 \text{ A}/\mu\text{s};$ $V_R = 100 \text{ V}; T_{VJ} = 125^\circ\text{C}$	2.2		A
$t_{rr}$		26		ns
$C_J$	$V_R = 100 \text{ V}; T_{VJ} = 125^\circ\text{C}$	24		pF
$R_{thJC}$				3.1 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

### 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

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

