IXYSRF

GS150TA25120

GS150TI25120 **GS150TC25120**

Gallium Arsenide Schottky Rectifier

I_{DC} = 20 A

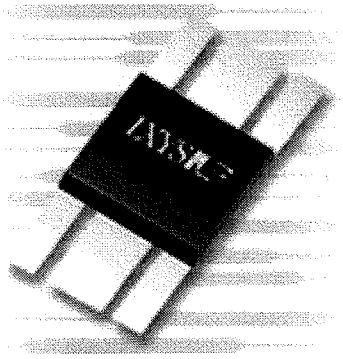
V_{RRM} = 250 V

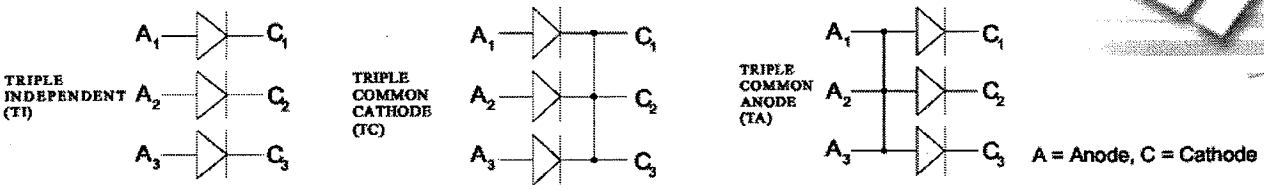
$C_{Junction}$ = 18 pF

Isolated Surface Mount Package

Preliminary Data

V_{RSM} V	V_{RRM} V	Type	Part Number	Configuration
250	250	GS150	TI25120	Triple Independent
250	250	GS150	TC25120	Triple Common cathode
250	250	GS150	TA25120	Triple Common anode





Symbol	Conditions	Maximum Ratings	
I_{FAV}	T_c = 25C	20	A
I_{FAV}	T_c = 90C	18	A
I_{FSM}	T_{VJ} = 45C; t_p = 10 ms (50 Hz) sine	30	A
T_{VJ}		-55...+175	C
T_{stg}		-55...+175	C
P_{tot}	T_c = 25C (20W/device)	60	W
Isolation	(Substrate to Case)	>2500	V
Isolation	(Diode to Diode)	>600	V

Symbol		Conditions	Characteristic Values Typ.	Max.	
IR	1.	TVJ = 25C VR = VRRM		2	mA
		TVJ = 125C VR = VRRM	2		mA
VF		IF = 10A; TVJ = 125C	1.3		V
		IF = 10A; TVJ = 25C	1.2	1.5	V
CJ		VR = 100V; TVJ = 125C	26		pF
RthJC				3	K/W
Weight				2	g

Pulse test: 1.Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data per diode unless otherwise specified

Features

- Low forward voltage
- Very high switching speed Trr <15ns
- 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)
- High frequency converters
- Resonant converters

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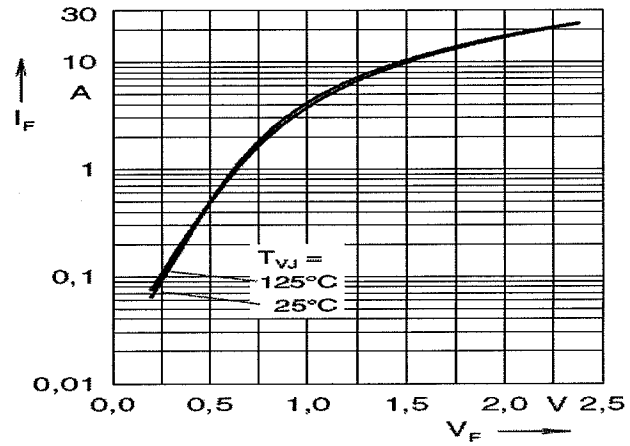


Fig. 1 typ. forward characteristics

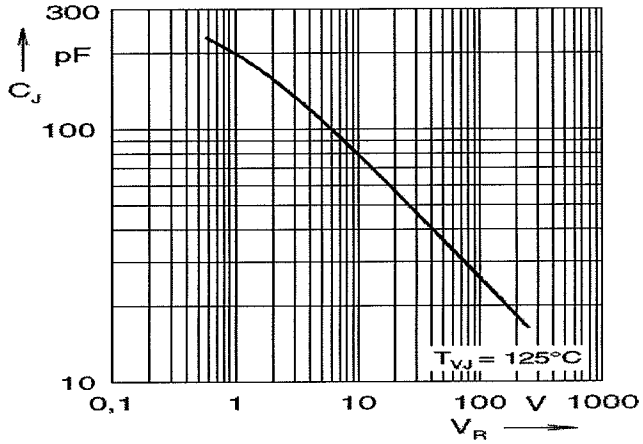


Fig. 2 typ. junction capacity versus blocking voltage

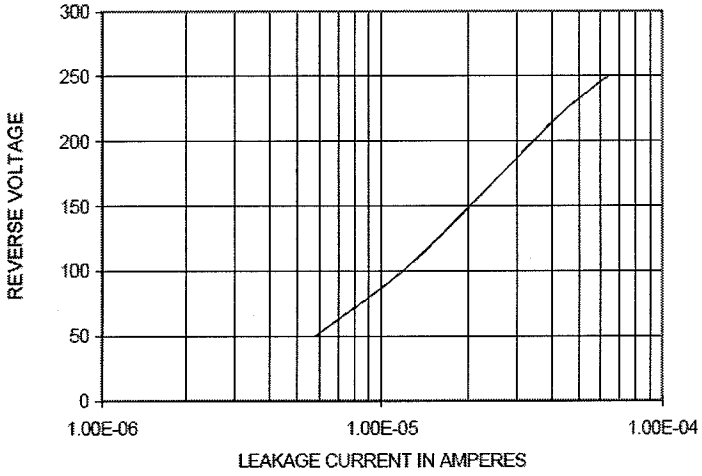


Fig. 3 Typical leakage current vs. voltage at 25C

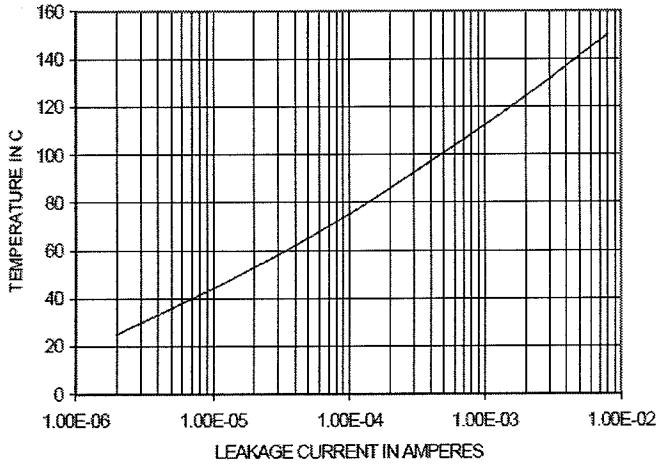
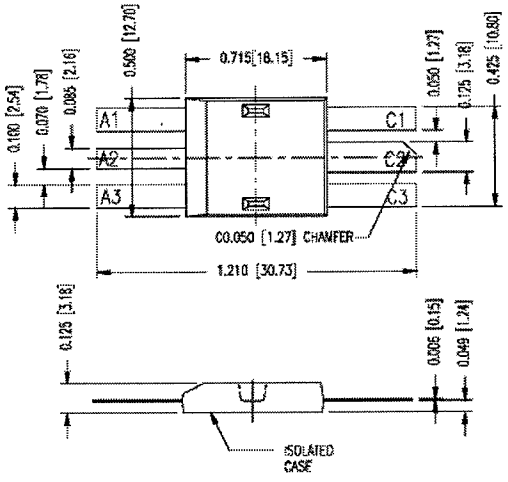


Fig. 4 Typical leakage current vs. temperature at 100V



Explanatory comparison of the basic operational behavior of rectifier diodes and Gallium Arsenide Schottky diodes:

	Rectifier Diode	GaAs Schottky Diode
Conduction	By majority + minority carriers	By majority carriers only
Forward characteristics	V_F (I_F)	V_F (I_F), see Fig. 1
Turn off characteristics	Extraction of excess carriers causes temperature dependant reverse recovery (t_{rr}, I_{RM}, Q_{rr})	Reverse current charges junction capacity C_J, see Fig. 2; not temperature dependent
Turn on characteristics	Delayed saturation leads to V_{FR}	No turn on overvoltage peak

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