

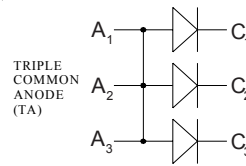
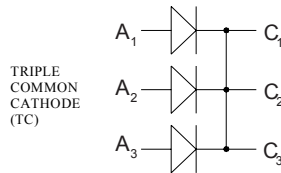
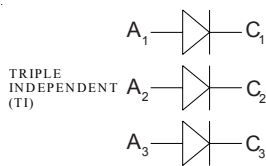
Gallium Arsenide Schottky Rectifier

Isolated Surface Mount Package

Preliminary Data

$I_{DC} = 10 \text{ A}$
 $V_{RRM} = 250 \text{ V}$
 $C_{Junction} = 18 \text{ pF}$

V_{RSM} V	V_{RRM} V	Type	Part Number	Configuration
250	250	GS150	TI25110	Triple Independent
250	250	GS150	TC25110	Triple Common cathode
250	250	GS150	TA25110	Triple Common anode



A = Anode, C = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FAV}	$T_C = 25^\circ\text{C}; \text{DC}$	10	A
I_{FAV}	$T_C = 90^\circ\text{C}; \text{DC}$	9	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}	$T_C = 25^\circ\text{C} (20\text{W/device})$	25	W
Isolation	(Substrate to Case)	>2500	V
Isolation	(Diode to Diode)	>600	V

Features

- Low forward voltage
- Very high switching speed
 $T_{rr} < 15\text{ns}$
- 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

Symbol	Conditions	Characteristic Values	
		typ.	max.
I_R ①	$T_{VJ} = 25^\circ\text{C} \quad V_R = V_{RRM}$ $T_{VJ} = 125^\circ\text{C} \quad V_R = V_{RRM}$	1.3	1.3 mA mA
V_F	$I_F = 5 \text{ A}; \quad T_{VJ} = 125^\circ\text{C}$	1.3	V
	$I_F = 5 \text{ A}; \quad T_{VJ} = 25^\circ\text{C}$	1.2	1.5 V
C_J	$V_R = 100 \text{ V}; \quad T_{VJ} = 125^\circ\text{C}$	18	pF
R_{thJC}		6	K/W
Weight		2	g

Applications

- MHz switched mode power supplies (SMPS)
- High frequency converters
- Resonant converters

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

Data per diode unless otherwise specified

IXYSRF reserves the right to change limits, conditions and dimensions

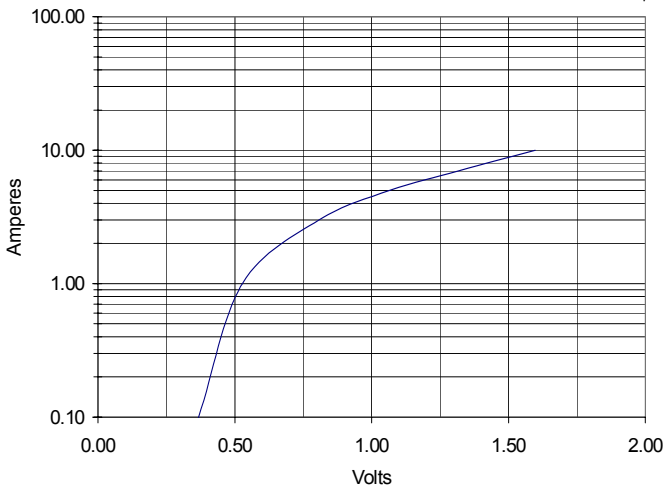


Fig. 1 Typical forward characteristics

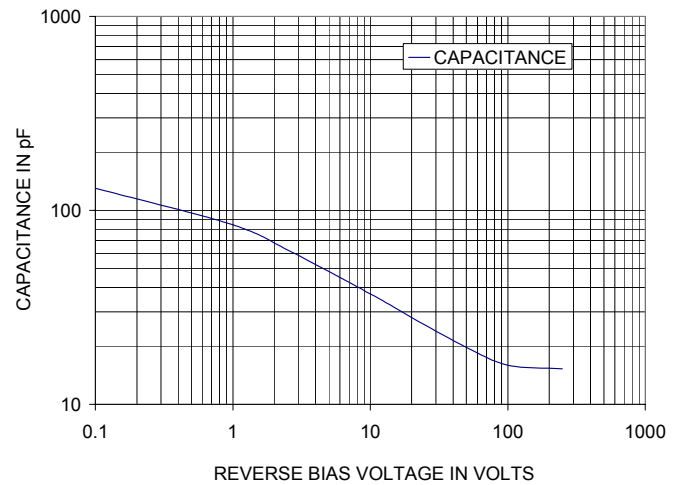


Fig. 2 Typical junction capacity versus blocking voltage

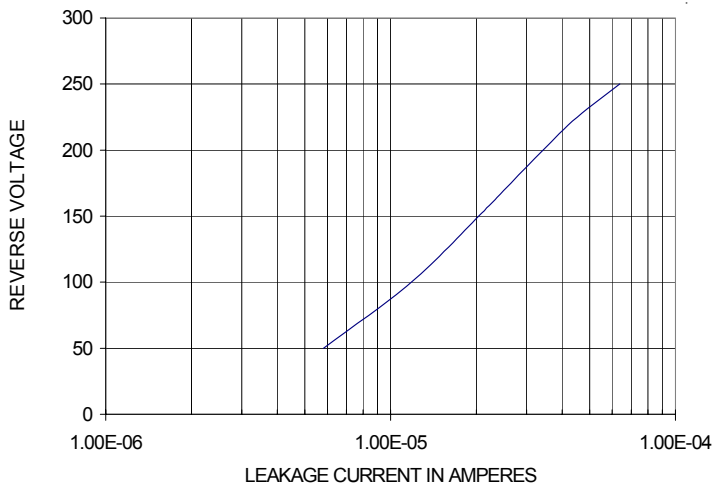


Fig. 3 Typical leakage current vs. voltage at 25C

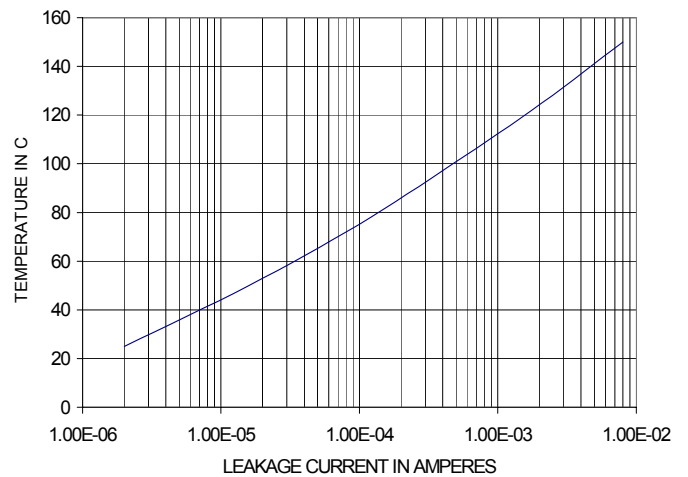


Fig. 4 Typical leakage current vs. temperature at 100V

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

