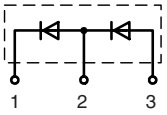
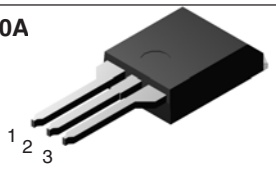
Gallium Arsenide Schottky Rectifier

Second generation
ISOPLUS220™
Electrically Isolated Back Surface

Preliminary Data

V_{RRM} = **600 V** (2x300V)
I_{DC} = **25 A**
$C_{Junction}$ = **10.7 pF**

Type	Marking on product	Circuit	Package
DGSS 10-06CC	DGSS 10-06CC		ISOPLUS220A 

Diode

Symbol	Conditions	Maximum Ratings	
$V_{RRM/RSM}$	(between terminal 1 and 3)	600	V
$V_{RRM/RSM}$		300	V
I_{FAV}	T_C = 25°C; DC	25	A
I_{FAV}	T_C = 90°C; DC	15	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	80	A
P_{tot}	T_C = 25°C	29	W

Symbol	Conditions		Characteristic Values min.	typ.	max.	
V_F	I_F = 10 A;	T_{VJ} = 25°C		1.7	2.1	V
	I_F = 10 A;	T_{VJ} = 125°C		1.2		V
I_R	$V_R = V_{RRM}$;	T_{VJ} = 25°C			0.25	mA
	$V_R = V_{RRM}$;	T_{VJ} = 125°C		25		µA
I_{RM}	I_F = 5 A;	-di_F/dt = 150 A/µs;		1.4		A
t_{rr}	V_R = 150 V;	T_{VJ} = 125°C		23		ns
C_J	V_R = 150 V;	T_{VJ} = 125°C		10.7		pF
R_{thJC}					5.2	K/W

Data according to IEC 60747 and per diode unless otherwise specified

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
- low leakage current

ISOPLUS220™ Package:
- isolated back surface
- low coupling capacy between pins and heatsink
- enlarged creepage
- high reliability
- industry standard outline

Applications

Power Factor Correction (PFC)
Switched Mode Power Supplies:
- AC-DC converters
- DC-DC converters

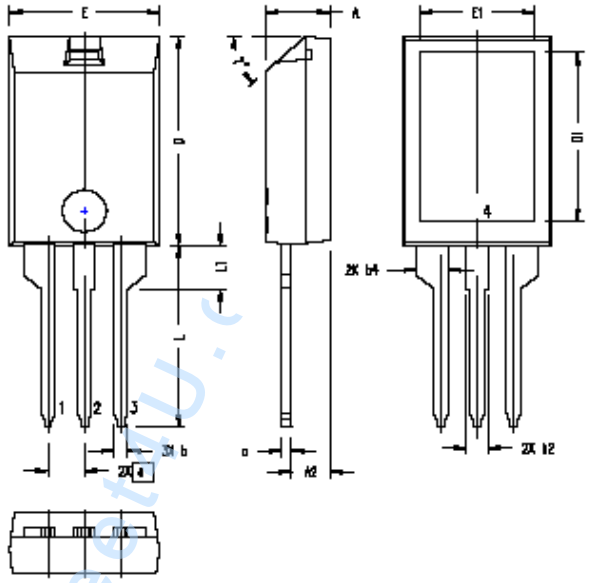
with:
- high switching frequency
- high efficiency
- low EMI

for use e. g. in:
- telecom
- computer
- automotive equipment

Component			
Symbol	**Conditions**	**Maximum Ratings**	
I_{RMS}	per pin	45	A
T_{VJ}		-55...+175	°C
T_{stg}		-55...+150	°C
V_{ISOL}	$I_{ISOL} \leq 1$ mA; 50/60 Hz	2500	V~
F_C	mounting force with clip	10...50	N

Symbol	**Conditions**	**Characteristic Values**		
		min.	**typ.**	**max.**
C_p	coupling capacity between shorted pins and mounting tab in the case		15	pF
R_{thCS}			0.3	K/W
Weight			2	g

ISOPLUS220 OUTLINE



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.157	.197	4.00	5.00
A2	.098	.118	2.50	3.00
b	.035	.051	0.90	1.30
b2	.049	.065	1.25	1.65
b4	.093	.100	2.35	2.55
c	.028	.039	0.70	1.00
D	.591	.630	15.00	16.00
D1	.472	.512	12.00	13.00
E	.394	.433	10.00	11.00
E1	.295	.335	7.50	8.50
e	.100 BASIC		2.55 BASIC	
L	.512	.571	13.00	14.50
L1	.118	.138	3.00	3.50
T°			42.5°	47.5°

NOTE:
1. Bottom heatsink (Pin 4) is electrically isolated from Pin 1, 2, or 3.
2. This drawing will meet dimensional requirement of JEDEC 5S Product Outline TO-273 except D and D1 dimension.

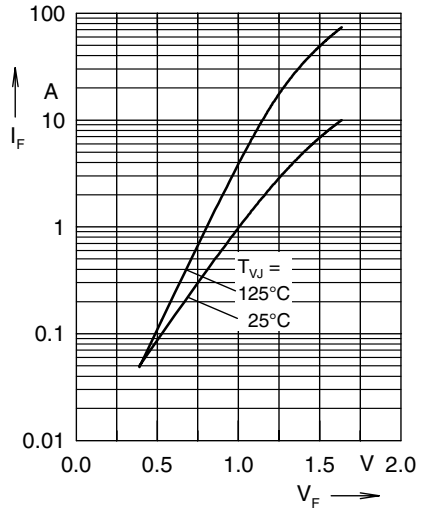


Fig. 1 typ. forward characteristics

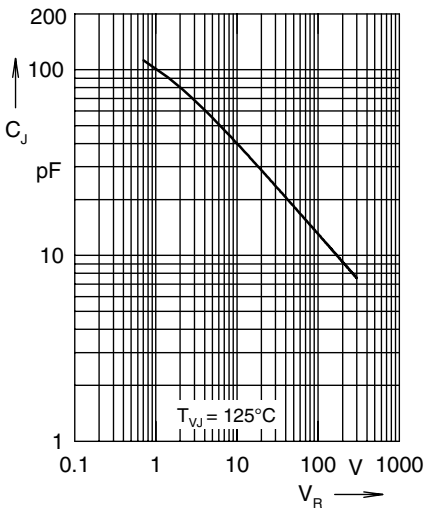


Fig. 2 typ. junction capacity versus blocking voltage

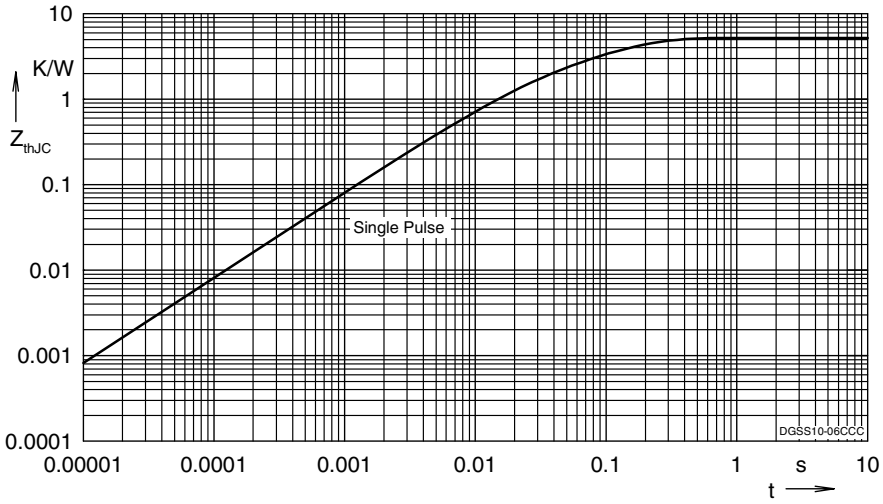


Fig. 3 typ. thermal impedance junction to case