

Features

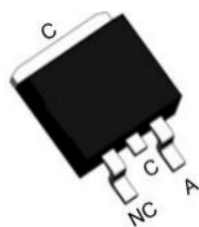
- SiC planar SBD
- Zero forward recovery voltage
- Zero reverse recovery current
- Excellent surge current capability
- Temperature independent switching
- Positive temperature coefficient on V_F
- High frequency operation

Key Performance Parameters

Parameter	Value	Unit
V_{RRM}	650	V
$I_F (T_C=160^\circ\text{C})$	4	A
Q_C	19	nC

Application

- Motor drives
- Uninterruptible power supplies
- Photovoltaic inverter
- Switch mode power supplies (SMPS)



TO-252



Equivalent Circuit

Table 1. Absolute Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter		Value	Units
V_{RRM}	Repetitive peak reverse voltage		650	V
$I_{F(AVG)}$	Average forward current	$T_C=160^\circ\text{C}$	4	A
I_{FSM}	Non-repetitive forward surge current	$T_C=25^\circ\text{C}$, $t_p = 10\text{ms}$, Half sine pulse	42	
P_{tot}	Power Dissipation	$T_C=25^\circ\text{C}$	76	W
		$T_C=110^\circ\text{C}$	73	
T_J, T_{STG}	Operating Junction Storage Temperature Range		-55 to +175	$^\circ\text{C}$



Table 2 . Electrical Characteristics (T_J=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
V _{DC}	DC blocking voltage	T _c =25°C	650	--	--	V
V _F	Forward voltage	I _F =4A , T _c =25°C	--	1.26	1.45	V
		I _F =4A , T _c =135°C	--	1.29	1.58	
		I _F =4A , T _c =175°C	--	1.41	1.83	
I _R	Reverse current	V _R =650V , T _c =25°C	--	1	50	uA
		V _R =650V , T _c =175°C	--	7	200	
Q _C	Total capacitive charge	V _R =400V , T _c =175°C	--	19	--	nC
C	Total capacitance	V _R = 1V , f=1MHZ	--	227	--	pF
		V _R =300V , f=1MHZ	--	34	--	
		V _R =600V , f=1MHZ	--	31	--	
E _C	Capacitance Stored Energy	V _R =400V	--	3	--	uJ

Typical Performance ($T_J = 25^\circ\text{C}$, unless otherwise noted) :

Fig 1 : Typical forward characteristics

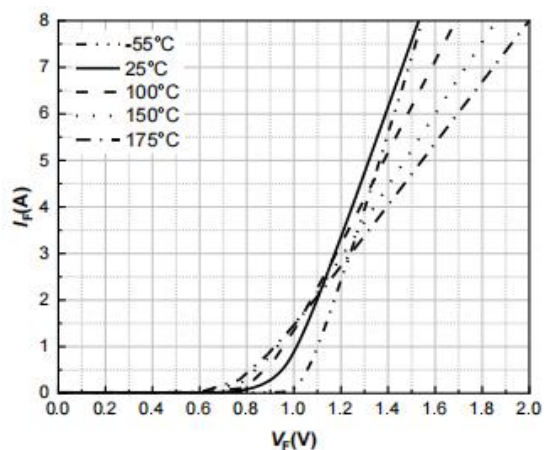


Fig 2: Typical reverse current as function of reverse voltage

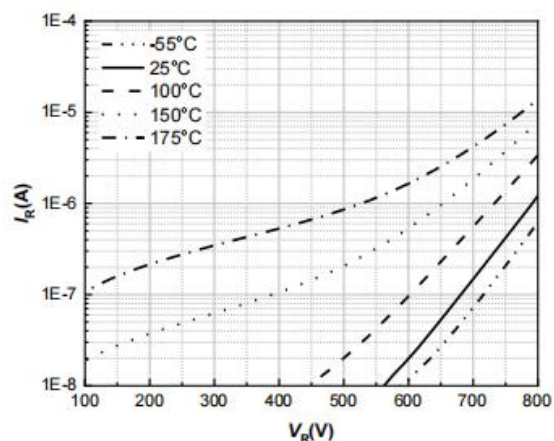


Fig 3: Typical capacitance as function of reverse voltage, $C=f(V_R)$; $T_J=25^\circ\text{C}$; $f=1\text{ MHz}$

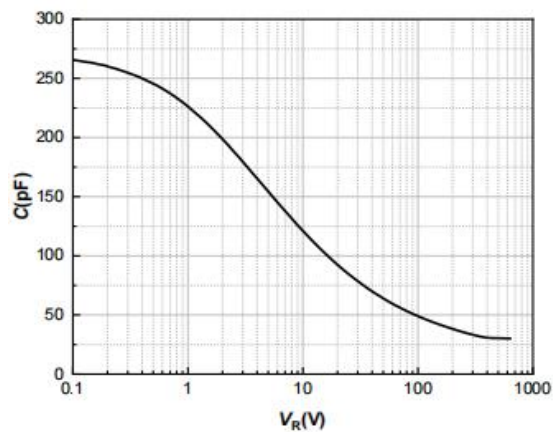
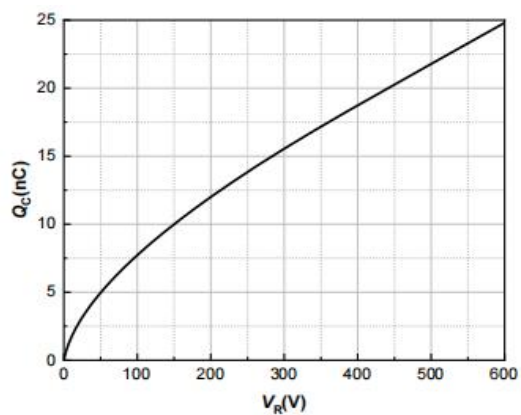
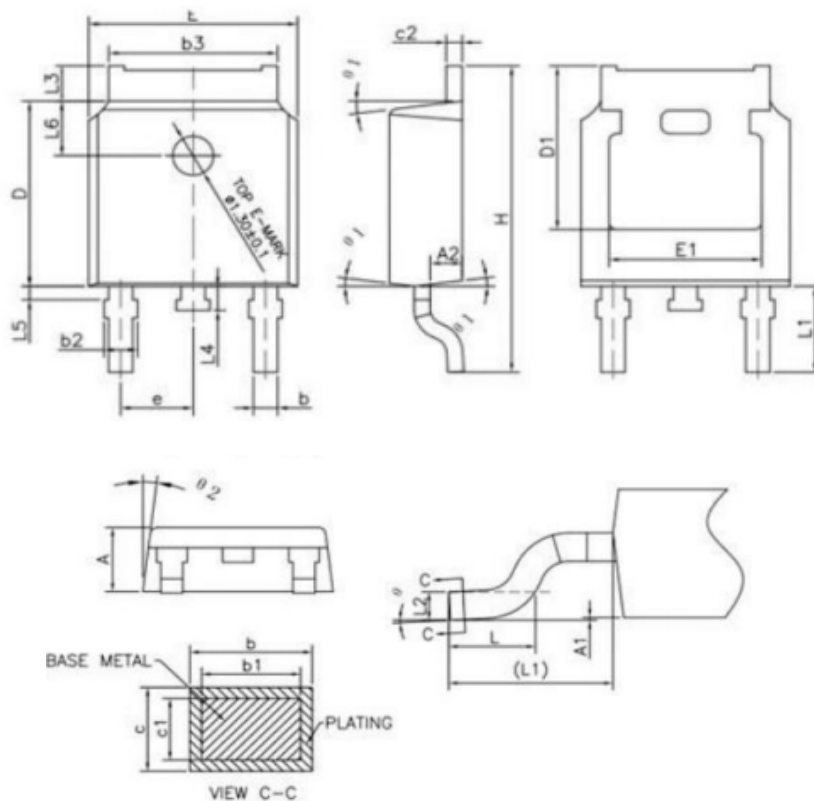


Fig 4: Typical reverse charge as function of reverse voltage



Package Dimensions

TO-252



COMMON DIMENSIONS
(UNITS OF MEASURE = MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	2.20	2.30	2.38
A1	0	---	0.10
A2	0.90	1.01	1.10
b	0.72	---	0.85
b1	0.71	0.76	0.81
b2	0.72	---	0.90
b3	5.13	5.33	5.46
c	0.47	---	0.60
c1	0.46	0.51	0.56
c2	0.47	---	0.60
D	6.00	6.10	6.20
D1	5.25	---	---
E	6.50	6.60	6.70
E1	4.70	---	---
e	2.186	2.286	2.386
H	9.80	10.10	10.40
L	1.40	1.50	1.70
L1	2.90 REF		
L2	0.508 BSC		
L3	0.90	---	1.25
L4	0.60	0.80	1.00
L5	0.15	---	0.75
L6	1.80 REF		
θ	0°	---	8°
θ1	5°	7°	9°
θ2	5°	7°	9°