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SKKD80S12



SEMITRANS® 2N

SiC Rectifier Diode Module

SKKD80S12

Features*

- SiC Schottky diode
- Low inductance case
- Heat transfer through aluminium oxide ceramic insulated metal baseplate
- UL recognized, file no. E63532

Typical Applications

- Uncontrollable rectifiers for DC/DC converters
- High frequency rectifier applications

Remarks

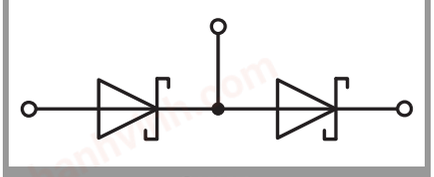
Recommended $T_{j,op}$ = -40 ... +150°C

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Diode				
I_{FAV}	T_j = 175 °C	T_c = 85 °C	68	A
		T_c =100 °C	61	A
I_{FRM}			168	A
I_{FM}	PW = 10µs, square, T_j = 25°C		1116	A
I_{FSM}	t_p = 10 ms	T_j = 25 °C	370	A
		T_j = 150 °C	258	A
i^2t	t_p = 10 ms	T_j = 25 °C	684	A^2s
		T_j = 150 °C	333	A^2s
V_{RSM}	T_j = 25°C		1200	V
V_{RRM}	T_j = 25°C		1200	V
T_j			-40 ... 175	°C
Module				
T_{stg}			-40 ... 125	°C
V_{isol}	a.c.; 50 Hz; r.m.s.	1 min	4000	V
		1 s	4800	V

Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
Diode						
V_F	I_F = 80 A	T_j = 25 °C			1.60	V
	chiplevel	T_j = 150 °C			2.10	V
V_{F0}	chiplevel	T_j = 25 °C			1.05	V
		T_j = 150 °C			0.90	V
r_F	chiplevel	T_j = 25 °C			6.9	mΩ
		T_j = 150 °C			15	mΩ
I_R	V_R = V_{RRM}, T_j = 25 °C				1.8	mA
C_j	f = 1 MHz, V_R = 800 V, T_j = 25 °C			0.340		nF
Q_c	V_R = 800 V, di/dt = 500 A/µs, T_j = 25 °C			0.26		µC
$R_{th(j-c)}$	per diode				0.36	K/W
	per module				0.18	K/W
Module						
L_{CE}				20		nH
$R_{th(c-s)}$	per diode (λ_{grease} = 0.81 W/(m*K))			0.08		K/W
	per module (λ_{grease} = 0.81 W/(m*K))			0.04		K/W
$R_{CC'+EE'}$	measured per diode	T_C = 25 °C		0.65		mΩ
		T_C =125 °C		1.0		mΩ
M_s	to heatsink M6		3.0		5.0	Nm
M_t	to terminals M5		2.5		5.0	Nm
a					5 * 9.81	m/s^2
w				160		g



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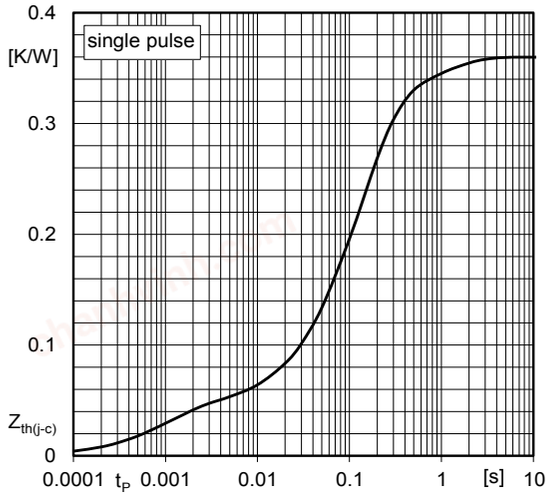


Fig. 1: Transient thermal impedance vs. time

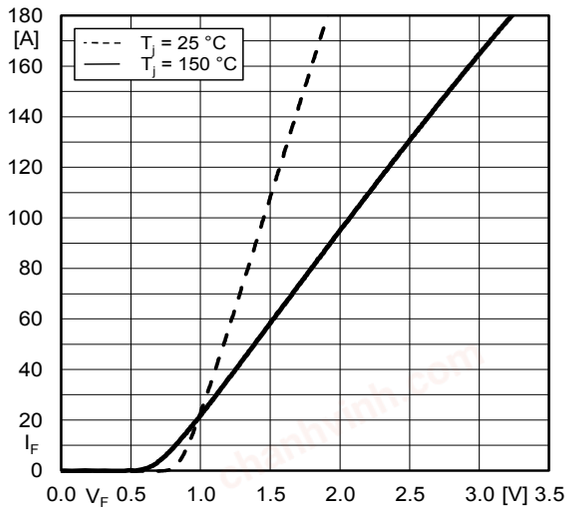


Fig. 2: Typical forward characteristic (chip level)

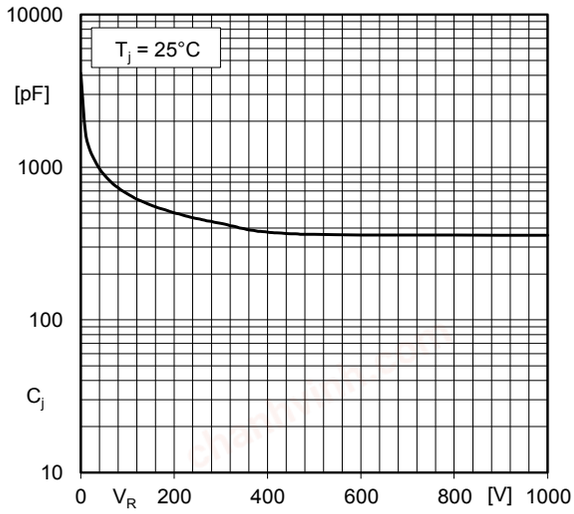
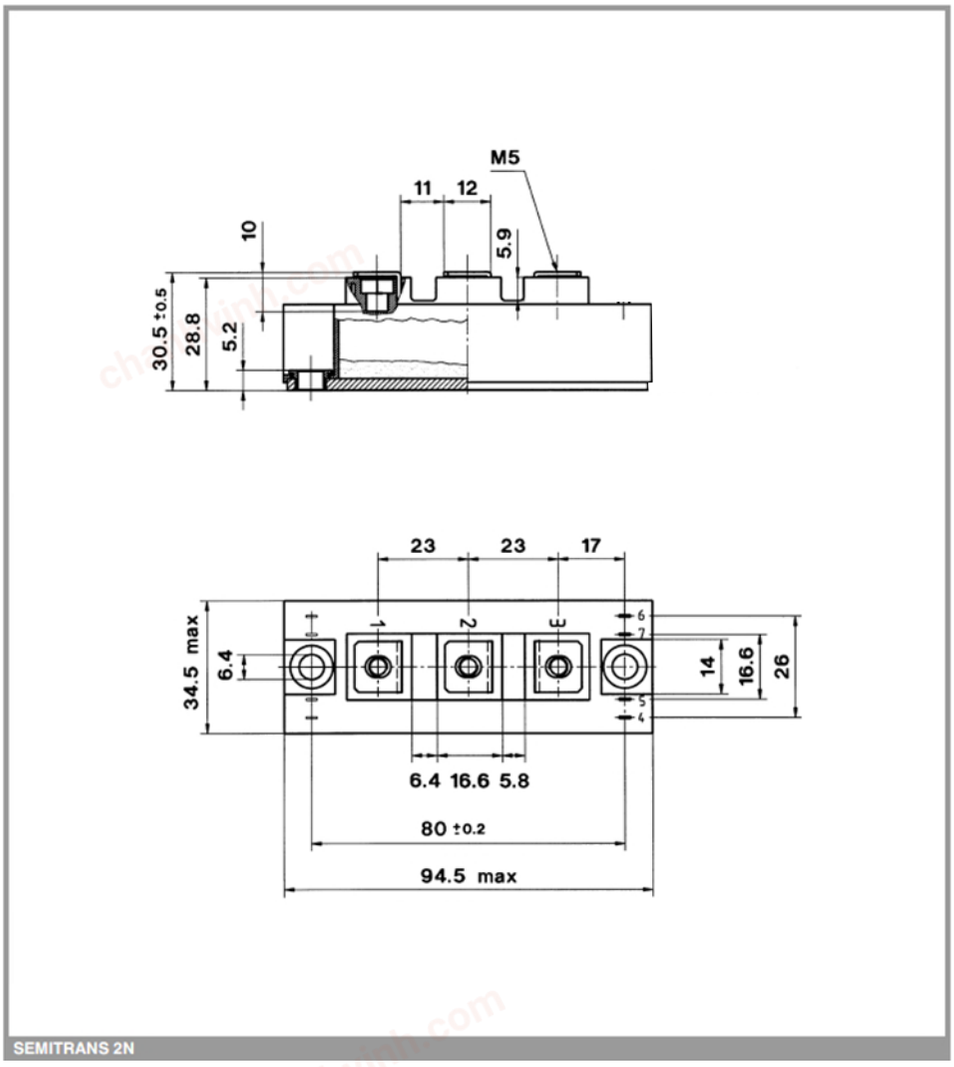


Fig. 3: Typ. capacitance-voltage charact. (1 MHz)

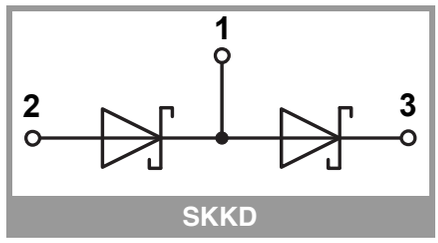
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This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.*

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