

查询"SKM50GB123D_06"供应商



SEMITRANS® 2

IGBT Modules

SKM 50GB123D

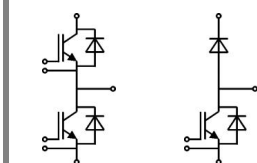
SKM 50GAL123D

Features

- MOS input (voltage controlled)
- Low inductance case
- Low tail current with low temperature dependence
- High short circuit capability, self limiting to $6 \times I_{C_{NOM}}$
- Fast and soft CAL diodes
- Isolated copper base plate using DCB (Direct Copper Bonding Technology)

Typical Applications

- AC inverter drives
- Power supplies



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Absolute Maximum Ratings				$T_c = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions		Values	Units	
IGBT					
V_{CES}	$T_j = 25^\circ\text{C}$		1200	V	
I_C	$T_j = 150^\circ\text{C}$	$T_{case} = 25^\circ\text{C}$	50	A	
		$T_{case} = 80^\circ\text{C}$	40	A	
I_{CRM}	$I_{CRM} = 2 \times I_{C_{nom}}$		100	A	
V_{GES}			± 20	V	
t_{psc}	$V_{CC} = 600\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125^\circ\text{C}$ $V_{CES} < 1200\text{ V}$		10	μs	
Inverse Diode					
I_F	$T_j = 150^\circ\text{C}$	$T_{case} = 25^\circ\text{C}$	50	A	
		$T_{case} = 80^\circ\text{C}$	40	A	
I_{FRM}	$I_{FRM} = 2 \times I_{F_{nom}}$		100	A	
I_{FSM}	$t_p = 10\text{ ms; sin.}$	$T_j = 150^\circ\text{C}$	550	A	
Freewheeling Diode					
I_F	$T_j = 150^\circ\text{C}$	$T_{case} = 25^\circ\text{C}$	50	A	
		$T_{case} = 80^\circ\text{C}$	40	A	
I_{FRM}	$I_{FRM} = 2 \times I_{F_{nom}}$		100	A	
I_{FSM}	$t_p = 10\text{ ms; sin.}$	$T_j = 150^\circ\text{C}$	550	A	
Module					
$I_{t(RMS)}$			200	A	
T_{vj}			- 40 ... +150	$^\circ\text{C}$	
T_{stg}			125	$^\circ\text{C}$	
V_{isol}	AC, 1 min.		2500	V	

Characteristics			T _c = 25 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 2 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C T _j = 125 °C		0,1	0,3	mA mA
V _{CE0}		T _j = 25 °C T _j = 125 °C		1 0,9	1,15 1,05	V V
r _{CE}	V _{GE} = 15 V	T _j = 25°C T _j = 125°C		30 44	37 53	mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.} T _j = 125°C _{chiplev.}		2,5 3,1	3 3,7	V V
C _{ies} C _{oes} C _{res}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		3,3 0,5 0,2		nF nF nF
Q _G	V _{GE} = -8V - +20V			500		nC
R _{Gint}	T _j = °C			2,5		Ω
t _{d(on)} t _r E _{on}	R _{Gon} = 27 Ω	V _{CC} = 600V I _{Cnom} = 40A		70 60 7		ns ns mJ
t _{d(off)} t _f E _{off}	R _{Goff} = 27 Ω	T _j = 125 °C		400 45 4,5		ns ns mJ
R _{th(j-c)}	per IGBT				0,4	K/W

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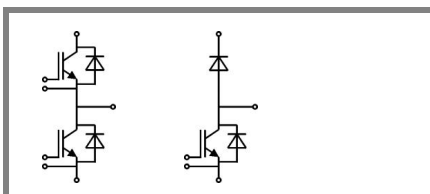
Typical Applications

- AC inverter drives
- Power supplies

Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$	2	2,5	V
		$T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$	1,8		V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$	1,1	1,2	V
		$T_j = 125 \text{ }^\circ\text{C}$			V
r_F		$T_j = 25 \text{ }^\circ\text{C}$	18	26	mΩ
		$T_j = 125 \text{ }^\circ\text{C}$		22	mΩ
I_{RRM}	$I_{Fnom} = 40 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$	35		A
Q_{rr}	$di/dt = 800 \text{ A}/\mu\text{s}$		7		μC
E_{rr}	$V_{cc} = 600\text{V}$		2		mJ
$R_{th(j-c)}$	per diode			0,7	K/W
Freewheeling Diode					
$V_F = V_{EC}$	$I_{Fnom} = 50 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{chiplev.}$	2	2,5	V
		$T_j = 125 \text{ }^\circ\text{C}_{chiplev.}$	1,8		V
V_{F0}		$T_j = 25 \text{ }^\circ\text{C}$	1,1	1,2	V
		$T_j = 125 \text{ }^\circ\text{C}$			V
r_F		$T_j = 25 \text{ }^\circ\text{C}$	18	26	V
		$T_j = 125 \text{ }^\circ\text{C}$			V
I_{RRM}	$I_{Fnom} = 40 \text{ A}$	$T_j = 125 \text{ }^\circ\text{C}$	35		A
Q_{rr}	$di/dt = 800 \text{ A}/\mu\text{s}$		7		μC
E_{rr}	$V_{cc} = 600\text{V}$		2		mJ
$R_{th(j-c)}$	per diode			0,7	K/W
Module					
L_{CE}				30	nH
$R_{CC'+EE'}$	res., terminal-chip	$T_{case} = 25 \text{ }^\circ\text{C}$	0,75		mΩ
		$T_{case} = 125 \text{ }^\circ\text{C}$	1		mΩ
$R_{th(c-s)}$	per module			0,05	K/W
M_s	to heat sink M6		3	5	Nm
M_t	to terminals M5		2,5	5	Nm
w				160	g

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

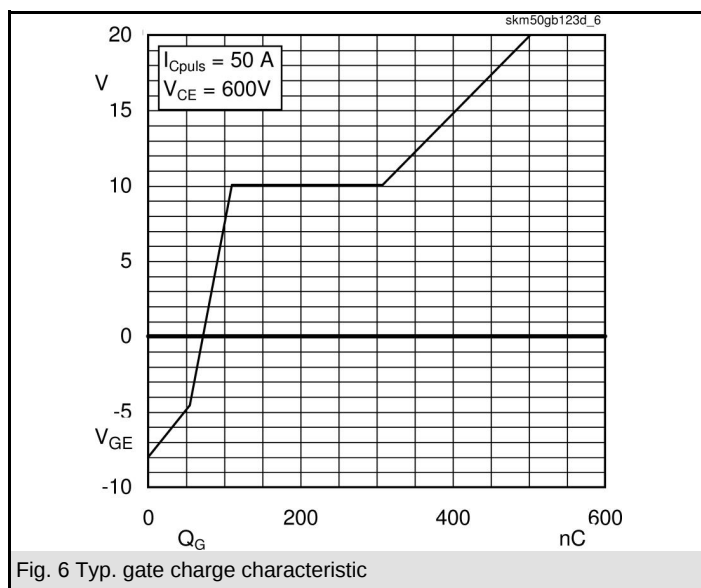
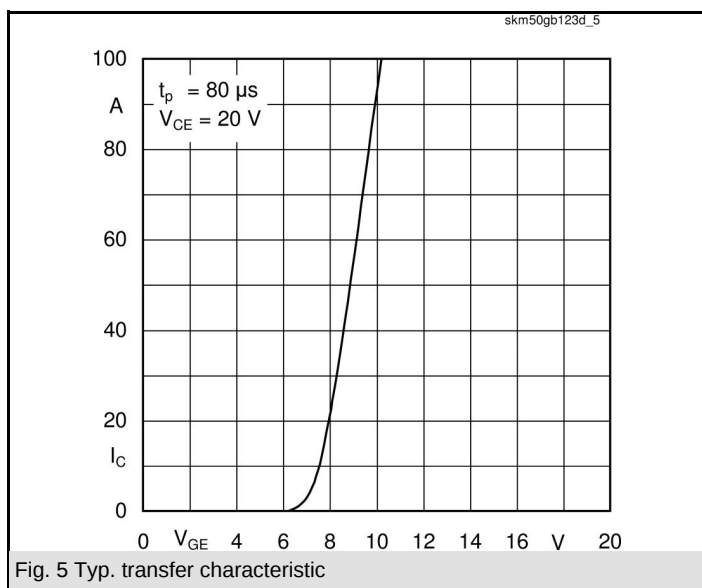
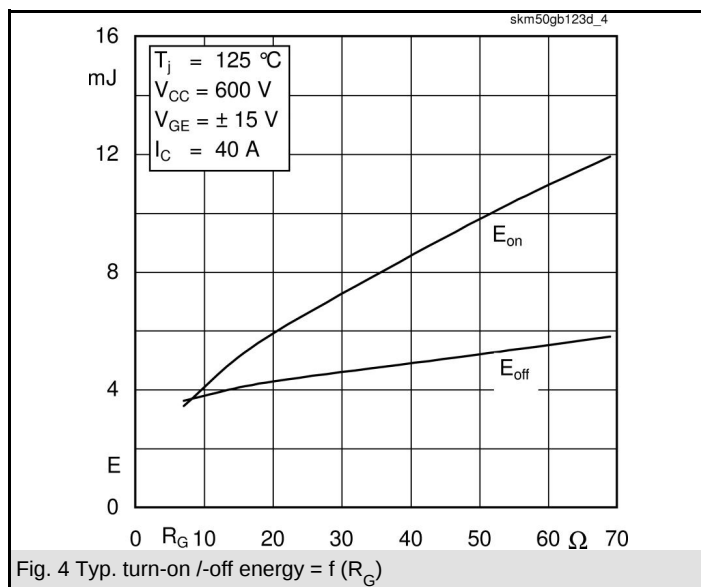
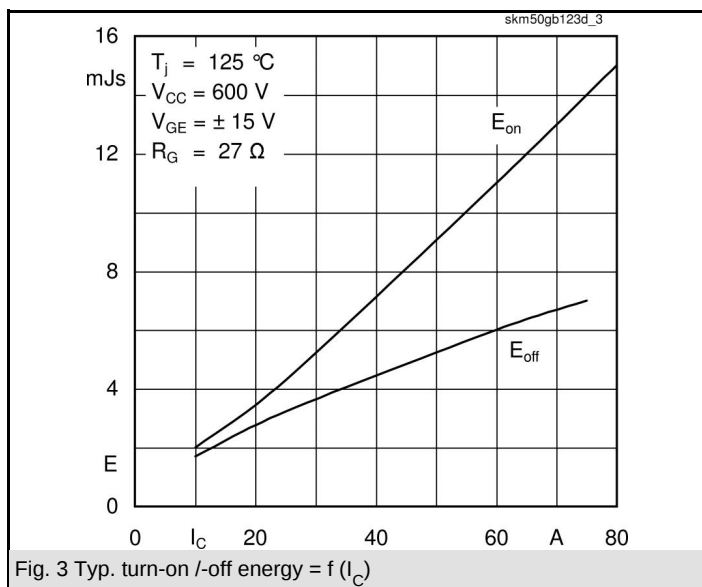
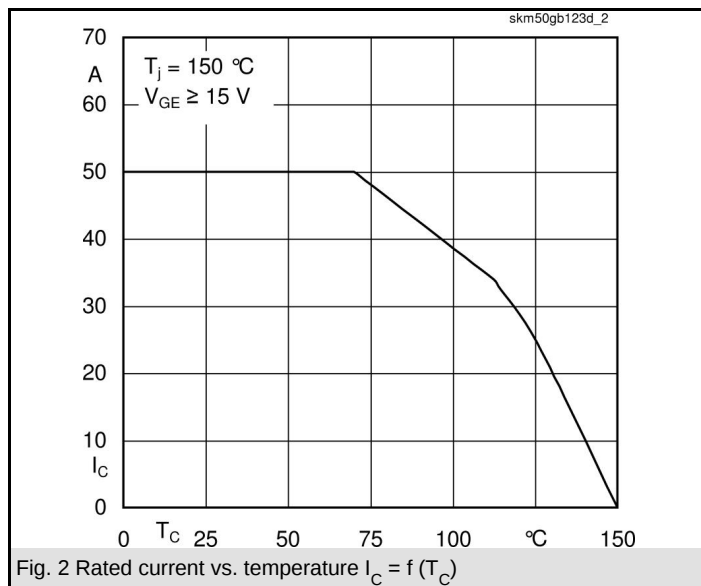
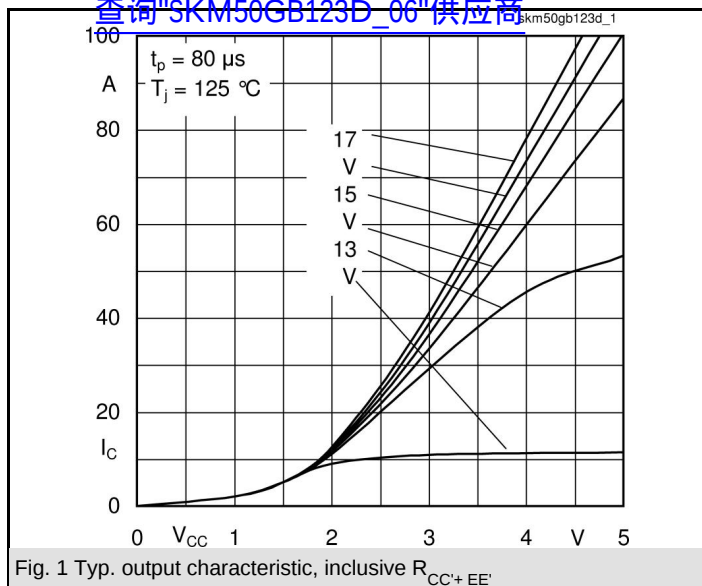
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