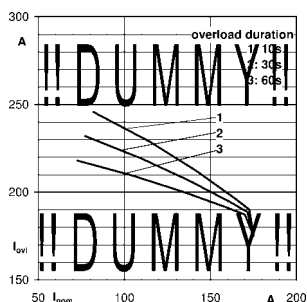


SKiM400GD126DLM 07026-

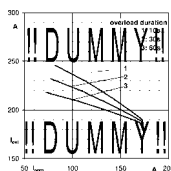


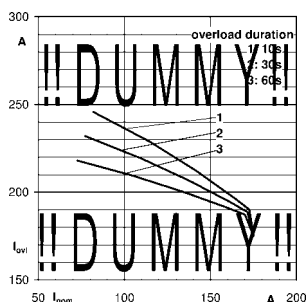
Trench IGBT Modules

SKiM400GD126DLM 07026-

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
IGBT				
V_{CES}			1200	V
I_C	$T_j = 150\text{ }^\circ\text{C}$	$T_s = 25\text{ }^\circ\text{C}$		A
		$T_s = 70\text{ }^\circ\text{C}$		A
I_{Cnom}			300	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$		600	A
V_{GES}			-20 ... 20	V
t_{psc}	$V_{CC} = 600\text{ V}$ $V_{GE} =$ (XXXXXXfailXXXXX) V $V_{CES} \leq 1200\text{ V}$	$T_j = 125\text{ }^\circ\text{C}$	10	μs
T_j			-40 ... 150	$^\circ\text{C}$
Inverse diode				
I_F	$T_j = 150\text{ }^\circ\text{C}$	$T_s = 25\text{ }^\circ\text{C}$	258	A
		$T_s = 80\text{ }^\circ\text{C}$	175	A
I_{Fnom}			300	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$		600	A
I_{FSM}	$t_p = 10\text{ ms, sin } 180^\circ, T_j = 25\text{ }^\circ\text{C}$		2592	A
T_j			-40 ... 150	$^\circ\text{C}$
Module				
$I_{t(RMS)}$			400	A
T_{stg}			-40 ... 125	$^\circ\text{C}$
V_{isol}	AC sinus 50 Hz, $t = 1\text{ min}$		2500	V

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
IGBT						
$V_{CE(sat)}$	$I_C = 300\text{ A}$ $V_{GE} = 15\text{ V}$ chiplevel	$T_j = 25\text{ }^\circ\text{C}$		1.65	2.05	V
		$T_j = 125\text{ }^\circ\text{C}$		1.95	2.40	V
V_{CE0}				1	1.2	V
				0.9	1.1	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ }^\circ\text{C}$		2.2	2.8	$\text{m}\Omega$
		$T_j = 125\text{ }^\circ\text{C}$		3.5	4.3	$\text{m}\Omega$
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 12\text{ mA}$		5	5.8	6.5	V
I_{CES}	$V_{GE} = 0\text{ V}$ $V_{CE} = 1200\text{ V}$	$T_j = 25\text{ }^\circ\text{C}$		0.1	0.3	mA
		$T_j = 125\text{ }^\circ\text{C}$				mA
C_{ies}	$V_{CE} = 25\text{ V}$ $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$		21.532		nF
C_{oes}		$f = 1\text{ MHz}$		1.126		nF
C_{res}		$f = 1\text{ MHz}$		0.976		nF
Q_G	$V_{GE} = -8\text{ V...} + 15\text{ V}$			2400		nC
R_{Gint}	$T_j = 25\text{ }^\circ\text{C}$			2.5		Ω
$t_{d(on)}$	$V_{CC} = 600\text{ V}$ $I_C = 300\text{ A}$ $R_{Gon} = 3\text{ }\Omega$					ns
t_r						ns
E_{on}				29		mJ
$t_{d(off)}$						ns
t_f						ns
E_{off}				46		mJ
$R_{th(j-s)}$	per IGBT					K/W





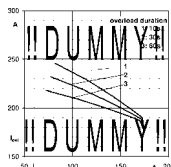
Trench IGBT Modules

SKiM400GD126DLM 07026-



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

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.



Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Inverse diode						
$V_F = V_{EC}$	$I_F = 300\text{ A}$ $V_{GE} = 0\text{ V}$ chip	$T_j = 25\text{ °C}$		2.5	3.0	V
		$T_j = 125\text{ °C}$		2.3	2.8	V
V_{F0}		$T_j = 25\text{ °C}$		1.1	1.45	V
		$T_j = 125\text{ °C}$		0.85	1.2	V
r_F		$T_j = 25\text{ °C}$		4.5	5.3	mΩ
		$T_j = 125\text{ °C}$		4.8	5.5	mΩ
I_{RRM}	$I_F = 300\text{ A}$					A
Q_{rr}	$V_{GE} = -15\text{ V}$					μC
E_{rr}	$V_{CC} = 600\text{ V}$					mJ
$R_{th(j-s)}$	per diode				0.19	K/W
Module						
L_{CE}					15	nH
$R_{CC'+EE'}$	terminal-chip	$T_s = 25\text{ °C}$		1.35		mΩ
		$T_s = 125\text{ °C}$		1.75		mΩ
M_s	to heat sink (M4)		2		3	Nm
M_t		to terminals M6	4		5	Nm
						Nm
w					310	g
Temperature sensor						
R_{100}	$T_{Sensor} = 100\text{ °C}$ ($R_{25} = 5\text{ kΩ}$)			339		Ω
$B_{100/125}$	$R_{(T)} = R_{100} \exp[B_{100/125}(1/T - 1/373)]$; $T[\text{K}]$;			4096		K