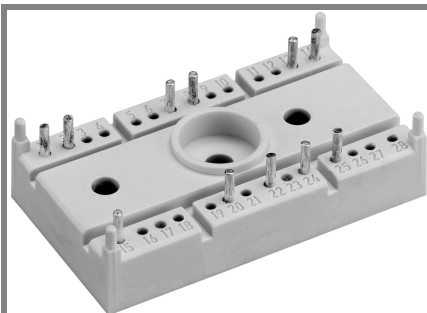


SK 115 MD 10



SEMITOP® 3

MOSFET Module

SK 115 MD 10

Preliminary Data

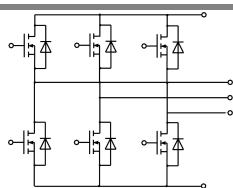
Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- Trench-gate technology
- Short internal connections and low inductance case

Typical Applications

- Low switched mode power supplies
- DC servo drives
- UPS

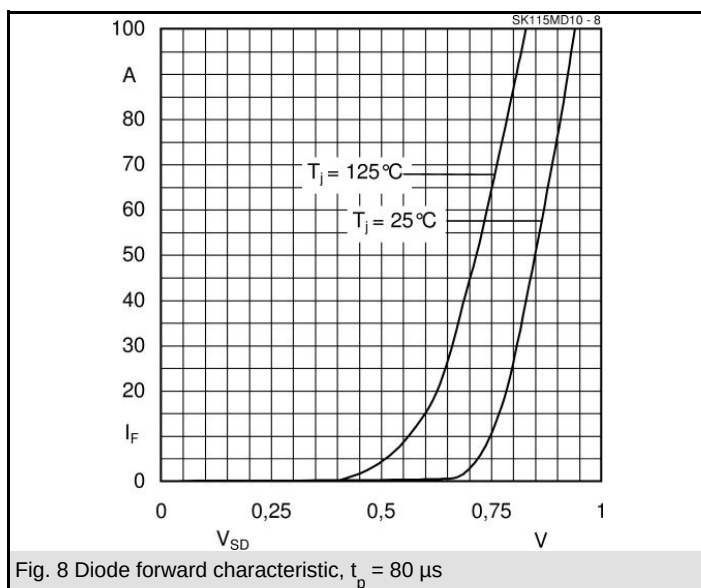
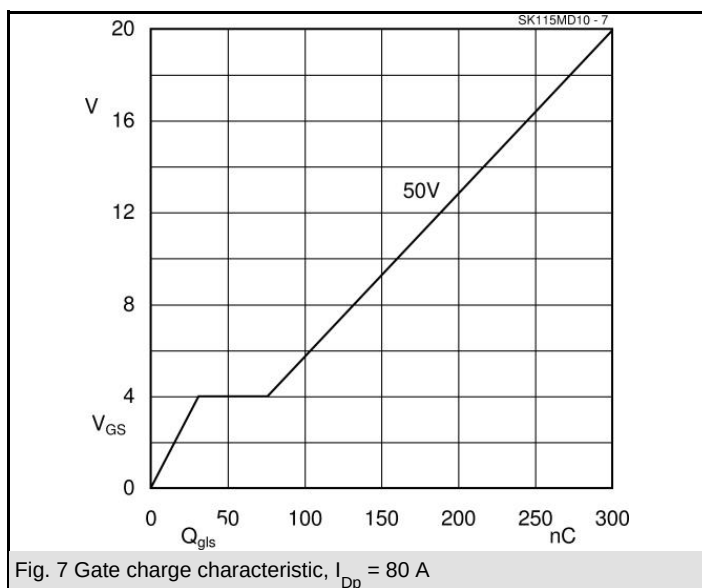
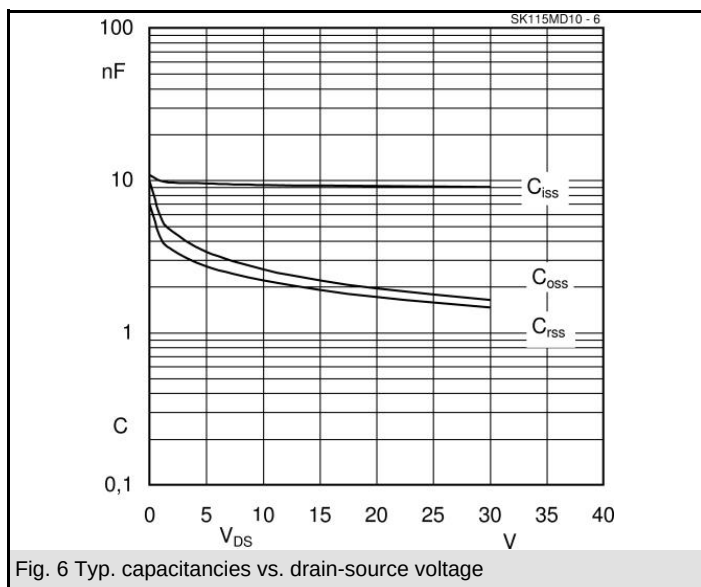
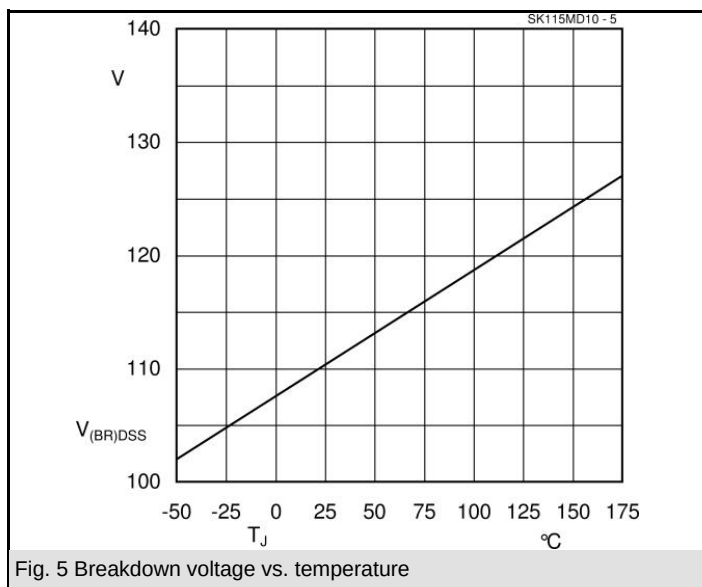
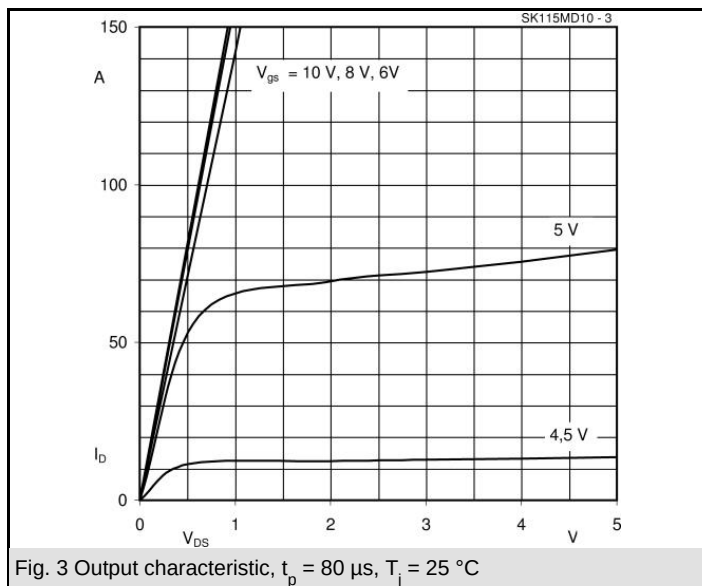
1) Maximum PCB temperature, at pins contact, = 85°C

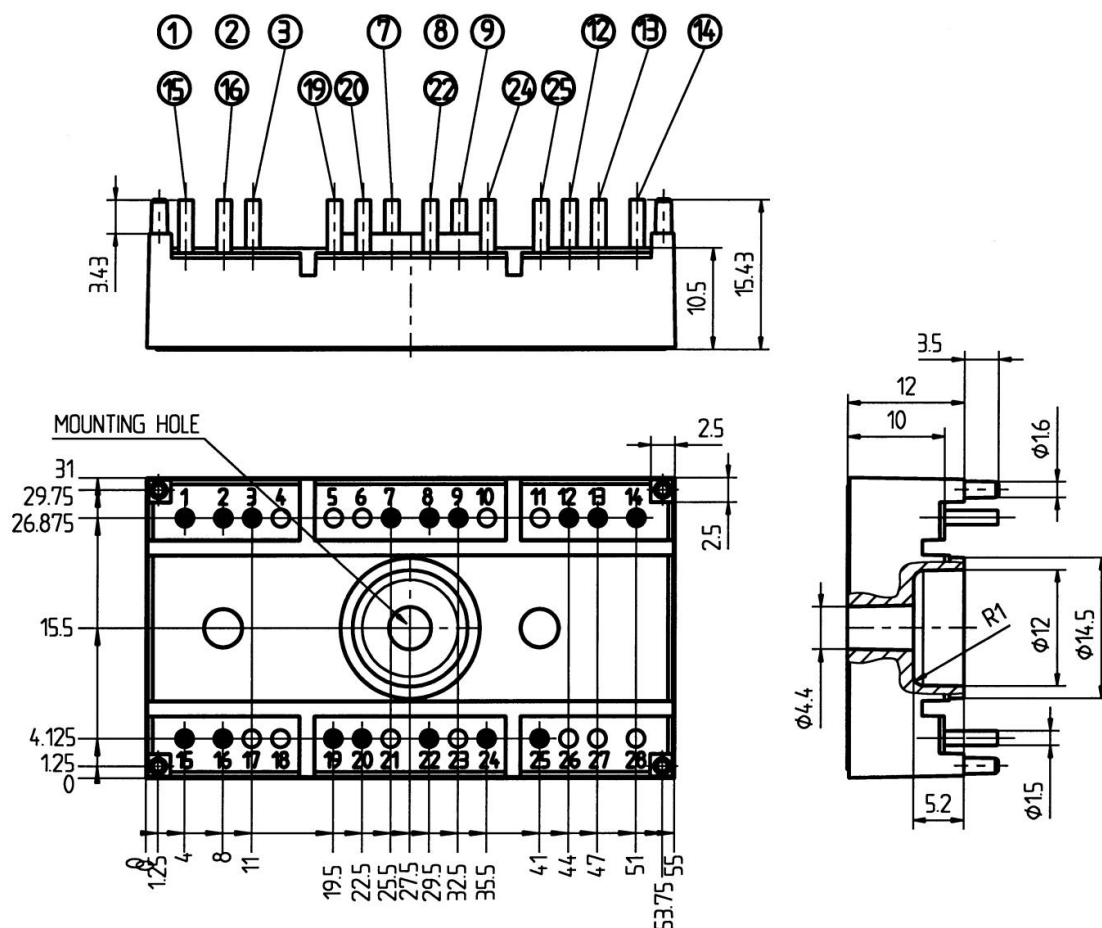


MD

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
MOSFET			
V_{DSS}		100	V
V_{GSS}		± 20	V
I_D	$T_s = 25\text{ (80) °C}; 1$	80 (60)	A
I_{DM}	$t_p < 1\text{ ms}; T_s = (80) \text{ °C}; 1$	(120)	A
T_j		- 40 ... + 150	°C
Inverse diode			
$I_F = -I_D$	$T_s = 25\text{ (80) °C};$	80 (60)	A
$I_{FM} = -I_{DM}$	$t_p < 1\text{ ms}; T_s = (80) \text{ °C};$	(120)	A
T_j		- 40 ... + 150	°C
Freewheeling CAL diode			
$I_F = -I_D$	$T_s = \text{°C}$		A
T_j			°C
T_{stg}		- 40 ... + 125	°C
T_{sol}	Terminals, 10 s	260	°C
V_{isol}	AC, 1 min (1s)	2500 / 3000	V

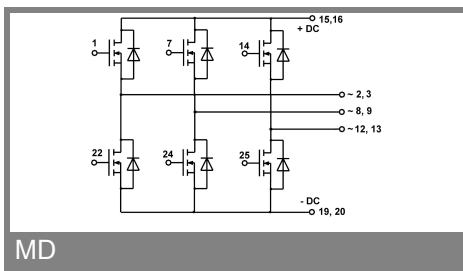
Characteristics		T _s = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
MOSFET					
V _{(BR)DSS}	V _{GS} = 0 V; I _D = 5,6 mA	100			V
V _{GS(th)}	V _{GS} = V _{DS} ; I _D = 5,6 mA	2,5	3,3		V
I _{DSS}	V _{GS} = 0 V; V _{DS} = V _{DSS} ; T _j = 25 °C			100	µA
I _{GSS}	V _{GS} = ± 20V ;V _{DS} = 0 V			100	nA
R _{DS(on)}	I _D = 80 A; V _{GS} = 10 V; T _j = 25 °C			7,5	mΩ
R _{DS(on)}	I _D = 80 A; V _{GS} = 10 V; T _j = 125 °C			13,5	mΩ
C _{CHC}	per MOSFET				pF
C _{iss}	under following conditions:		9,1		nF
C _{oss}	V _{GS} = 0 V; V _{DS} = 25 V; f = 1 MHz		1,8		nF
C _{rss}			1,6		nF
L _{DS}					nH
t _{d(on)}	under following conditions:		300		ns
t _r	V _{DD} = 50 V; V _{GS} = 10 V; I _D = 50 A		150		ns
t _{d(off)}	R _G = 56 Ω		1600		ns
t _f			160		ns
R _{th(j-s)}	per MOSFET (per module)			1,1	K/W
Inverse diode					
V _{SD}	I _F = 50 A; V _{GS} = 0 V; T _j = 50 °C		0,9		V
I _{RRM}	under following conditions:		24		A
Q _{rr}	I _F = 50 A; T _{vj} = 25 °C; R _G = 56 Ω		0,9		µC
t _{rr}	V _R = 65 A; di/dt = 100 A/µs		70		ns
Free-wheeling diode					
V _F	I _F = A; V _{GS} = V				V
I _{RRM}	under following conditions:				A
Q _{rr}	I _F = A; T _{vj} = °C				µC
t _{rr}	V _r = A; di/dt = A/µs				ns
Mechanical data					
M1	mounting torque			2,5	Nm
w			20		g
Case	SEMITOP® 3		T 16		





SUGGESTED HOLEDIAMETER FOR THE SOLDER PINS AND THE MOUNTING PINS IN THE PCB: 2 mm

Case T16



MD

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.