



SEMITRANS™ M1

Power MOSFET Modules

SKM 180A020

Features

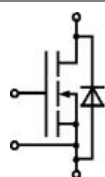
- N Channel, enhancement mode
- Avalanche characteristics
- Short internal connections avoid oscillations
- Isolated copper baseplates
- All electrical connections on top for easy busbaring
- Large clearance (10mm) and creepage distances (13mm)
- UL recognized, file no. E 63 532

Typical Applications*

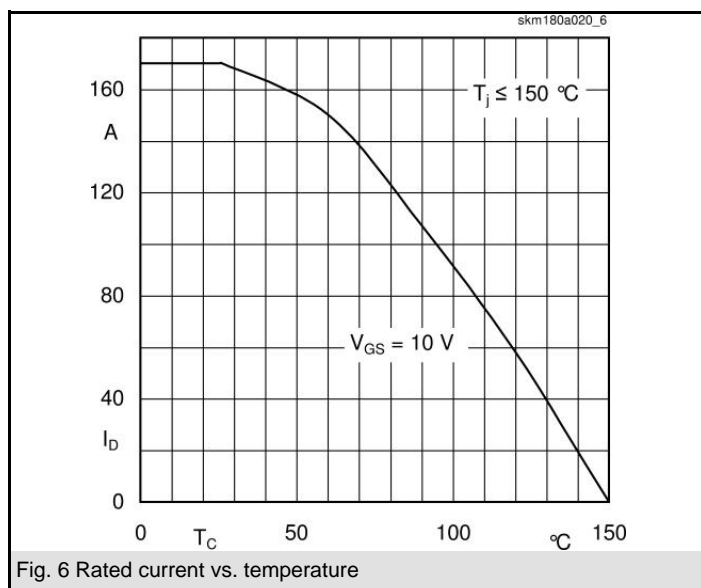
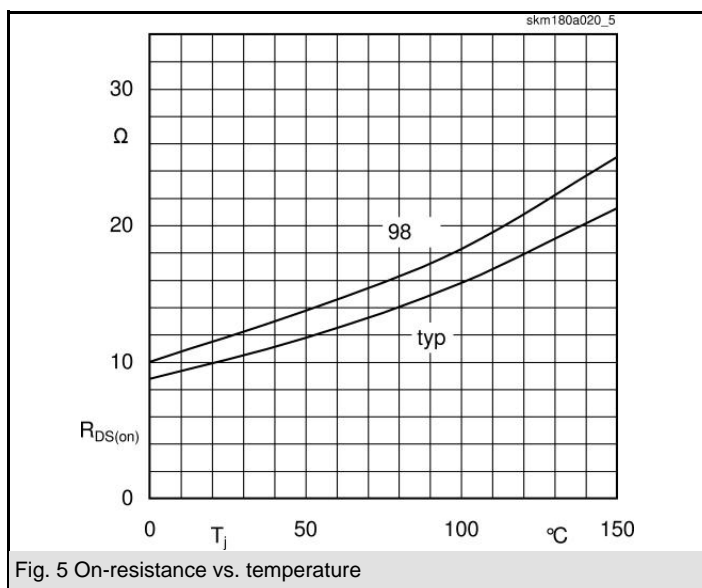
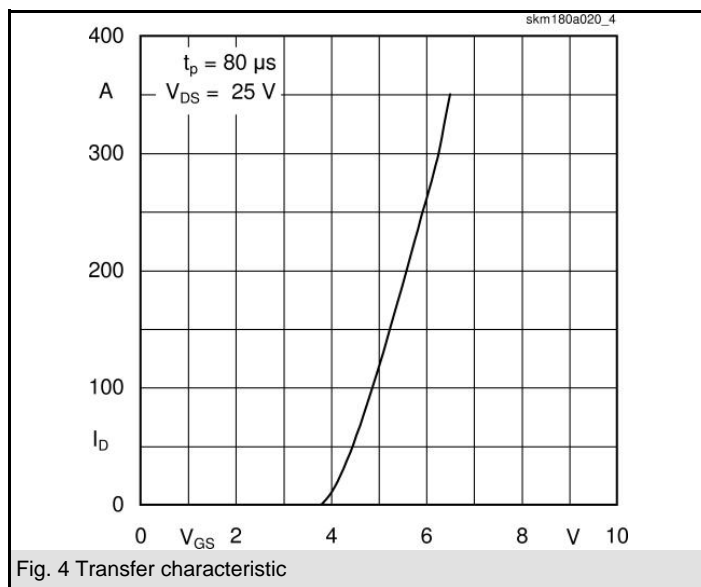
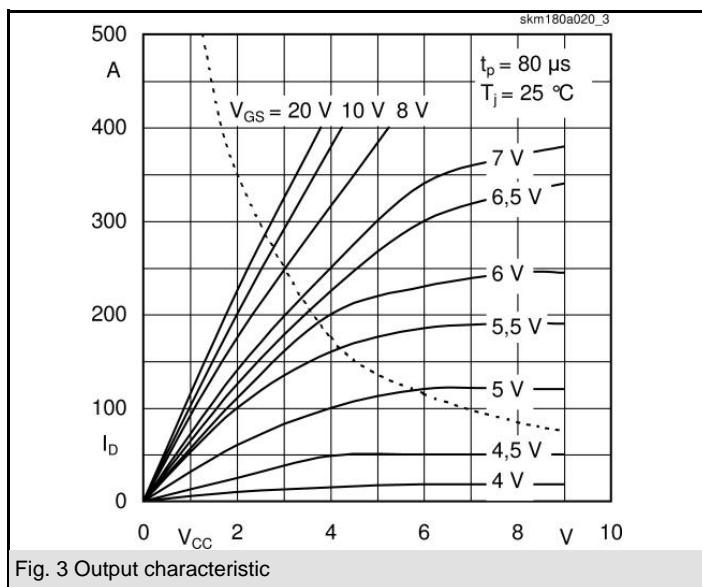
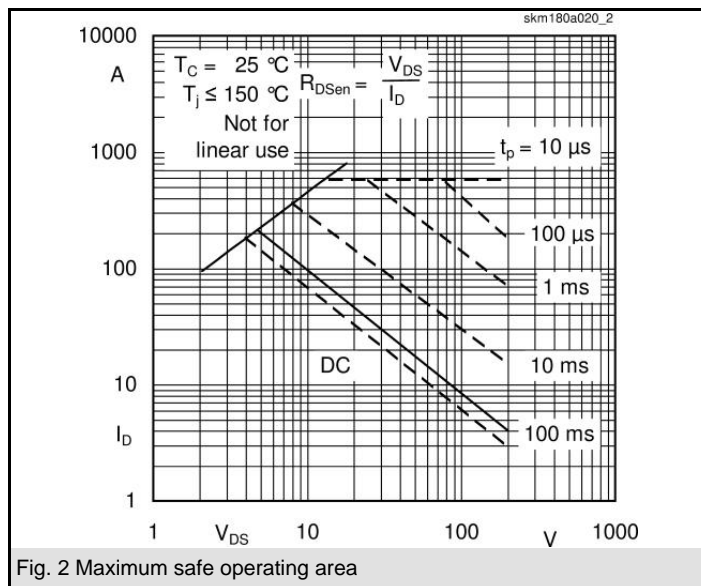
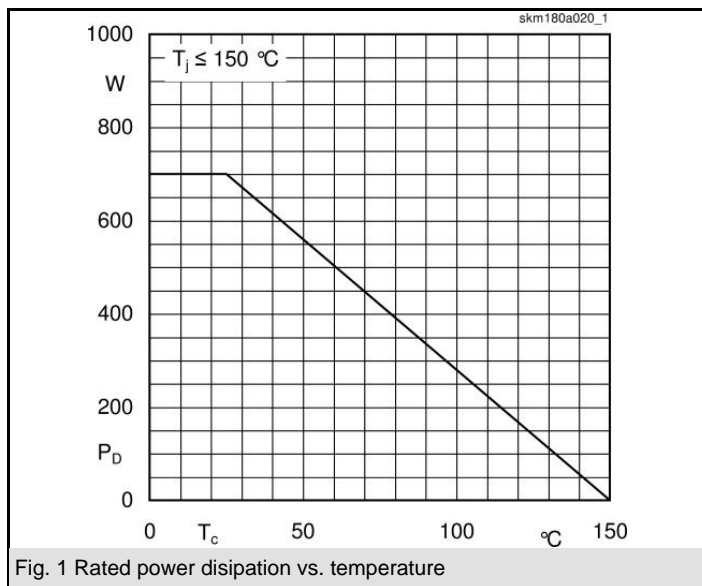
- Switched mode power supplies
- DC servo and robot drives
- DC choppers
- UPS equipment
- Plasma cutting
- Not suitable for linear amplification

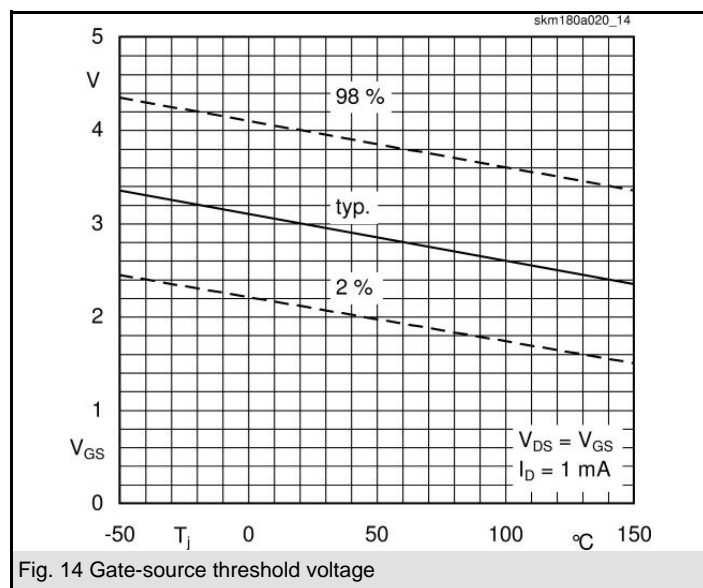
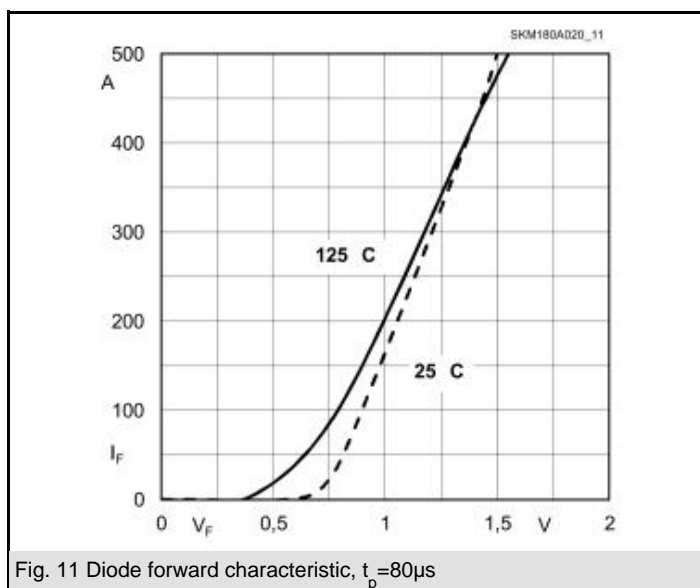
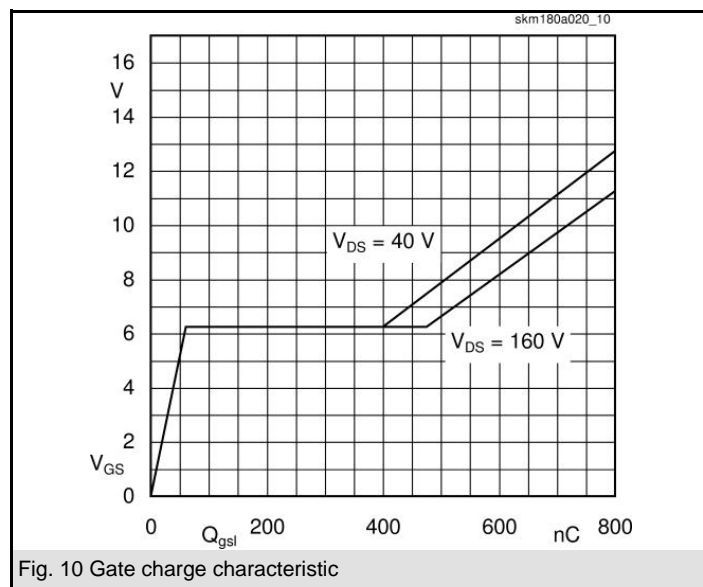
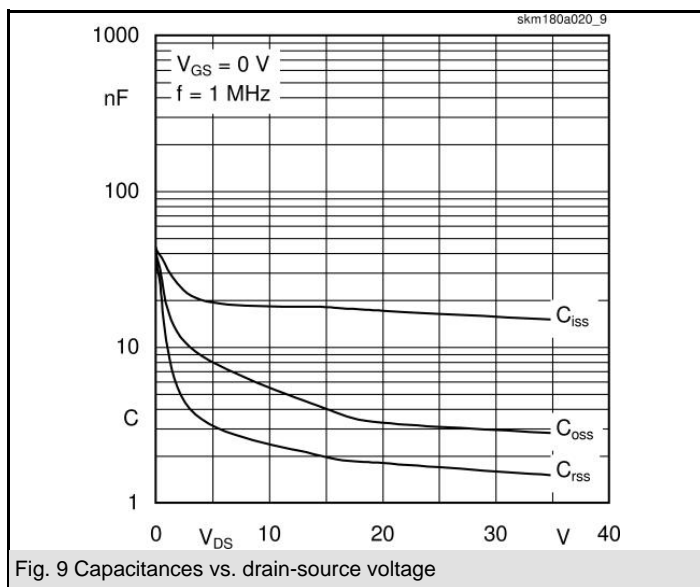
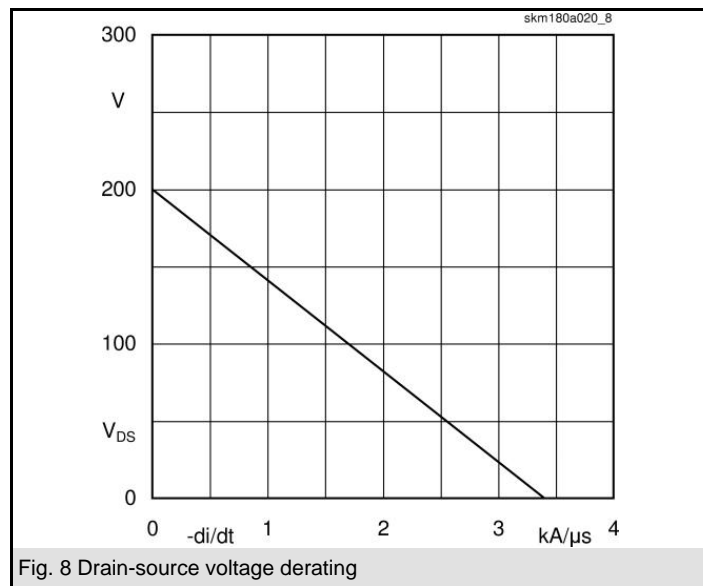
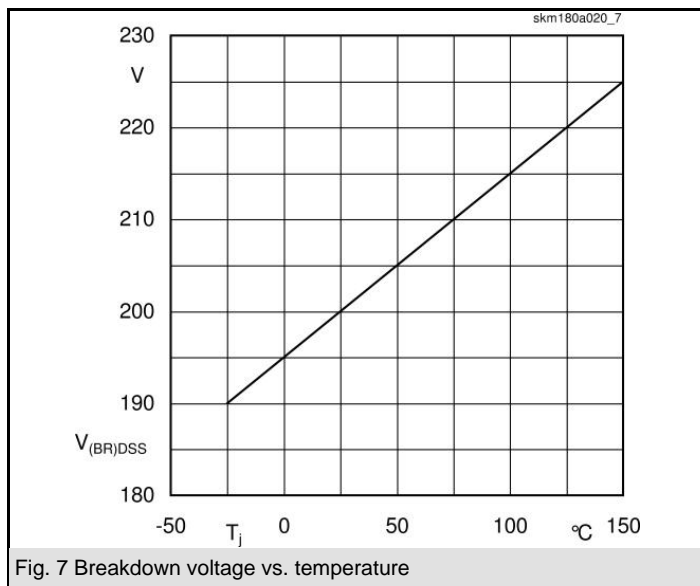
Absolute Maximum Ratings		T _c = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
V _{DS}	T _s = 25 (80) °C 1 ms	200	V
I _D		180 (135)	A
I _{DM}		540	A
V _{GS}		± 20	V
T _{vj} , (T _{stg})	AC, 1 min.	- 40 ... + 150 (125)	°C
V _{isol}		2500	V
Inverse diode			
I _F = - I _S		180	A
I _{FM} = - I _{SM}		540	A

Characteristics		$T_c = 25\text{ °C}$, unless otherwise specified		
Symbol	Conditions	min.	typ.	max.
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$, $I_D = 0,25\text{ mA}$	200		
$V_{GS(th)}$	$V_{GS} = V_{DS}$, $I_D = 1\text{ mA}$	2,1	3	4
I_{DSS}	$V_{GS} = 0\text{ V}$, $V_{DS} = 200\text{ V}$, $T_j = 25\text{ (125) °C}$		50 (300)	250 (1000)
I_{GSS}	$V_{GS} = 20\text{ V}$, $V_{DS} = 0\text{ V}$		10	100
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 110\text{ A}$		9	11
g_{fs}	$V_{DS} = 25\text{ V}$, $I_D = 110\text{ A}$	80	100	
C_{CHC}	$V_{GS} = 0$, $V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$			160
C_{iss}			16	24
C_{oss}			3	4,5
C_{rss}			1,5	2
L_{DS}				20
$t_{d(on)}$	$V_{DD} = 100\text{ V}$, $I_D = 80\text{ A}$,		100	
t_r	$V_{GS} = 10\text{ V}$, $R_G = 3,3\text{ }\Omega$		200	
$t_{d(off)}$			900	
t_f			220	
Inverse diode				
V_{SD}	$I_F = 360\text{ A}$; $V_{GS} = 0\text{ V}$		1,3	1,5
t_{rr}	$T_j = 25\text{ (125) °C}$		500	
Q_{rr}	$T_j = 25\text{ °C}$		10 (12)	
I_{rr}	$T_j = \text{°C}$			
Thermal characteristics				
$R_{th(j-c)}$	per MOSFET		0,18	K/W
$R_{th(c-s)}$	M_s , surface $10\text{ }\mu\text{m}$, per module		0,05	K/W
Mechanical data				
M_s	to heatsink (M6)	4	5	Nm
M_t	for terminals (M5)			Nm
w			130	g

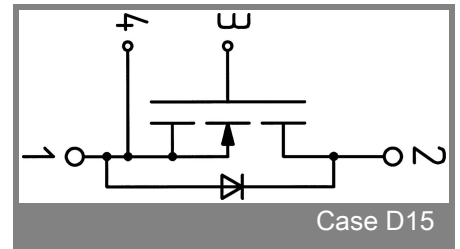


MA





Dimensions in mm



Case D15

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.