

SKM 453A020

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SEMITRANS™ M3

Power MOSFET Modules

SKM 453A020

Features

- N Channel, enhancement mode
- Avalanche characteristic
- Short internal connections avoid oscillations
- Isolated copper baseplate using Al₂O₃ ceramic Direct Copper Bonding Technology (DCB)
- All electrical connections on top for easy busbaring
- Large clearances (12 mm) and creepage distances (20 mm)

Typical Applications

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

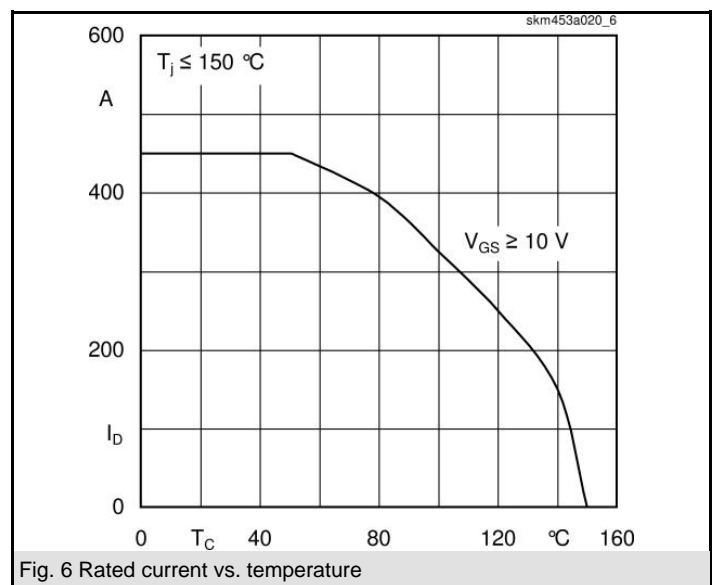
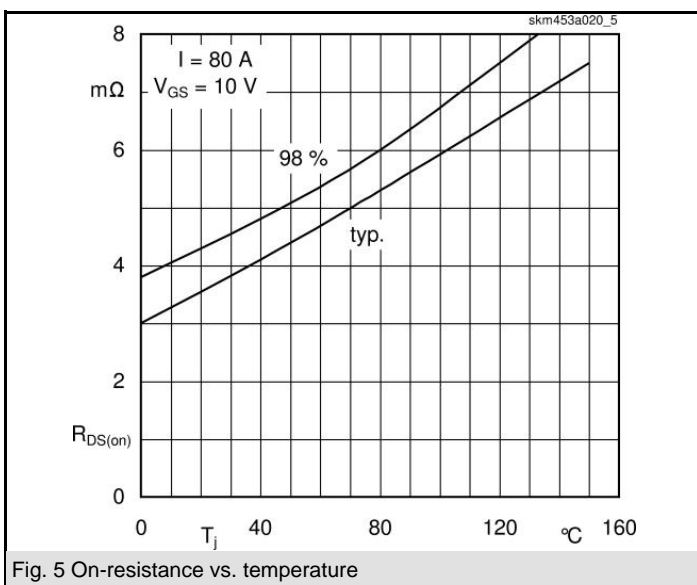
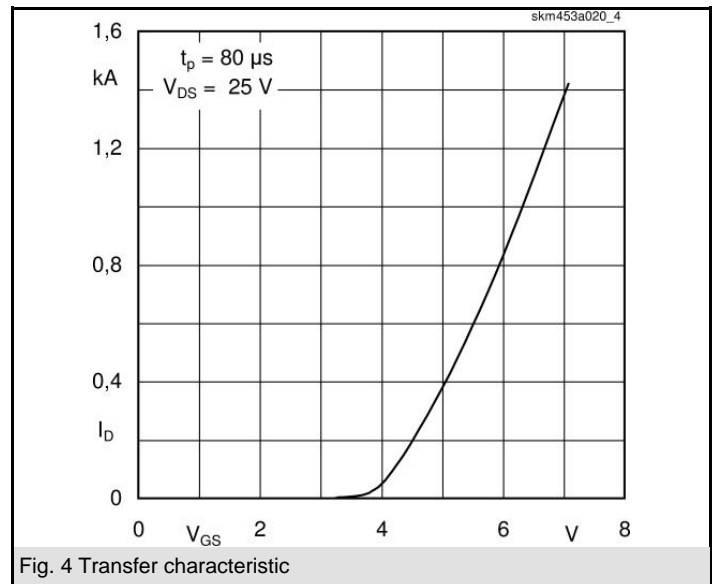
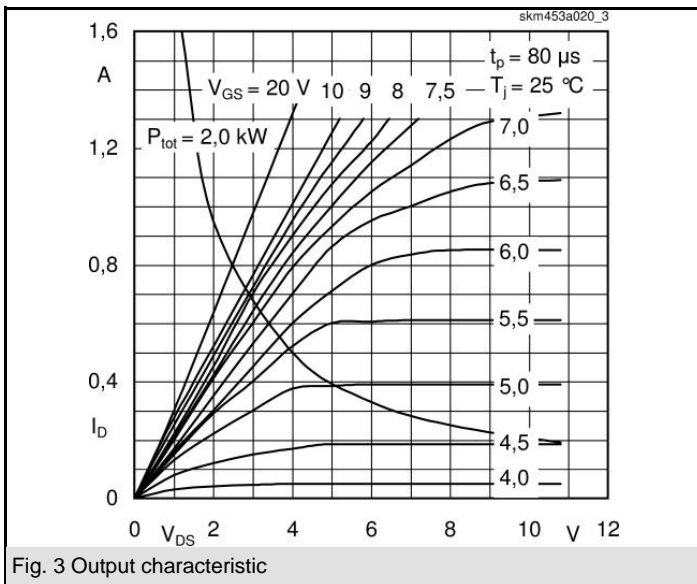
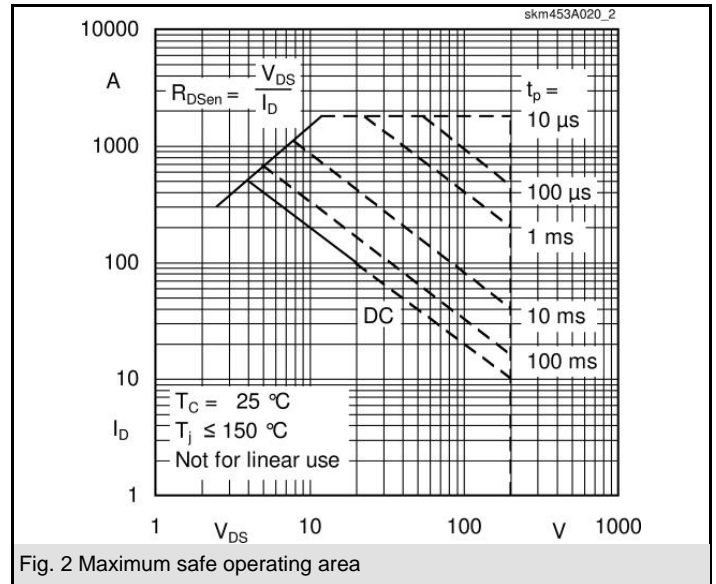
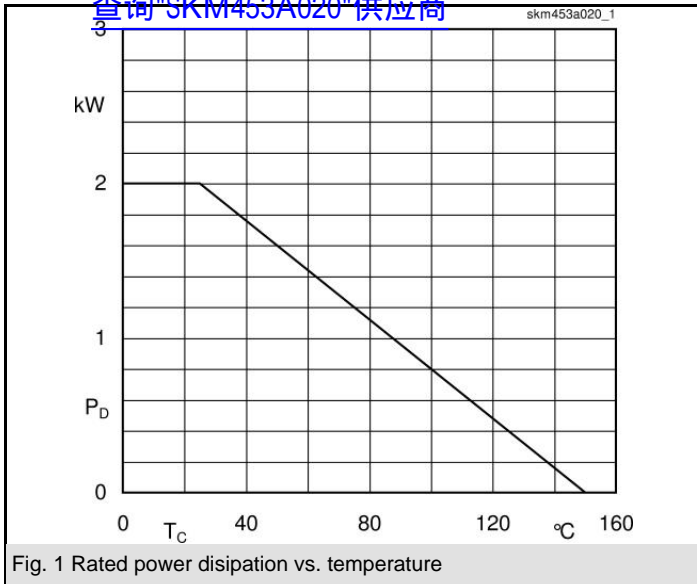


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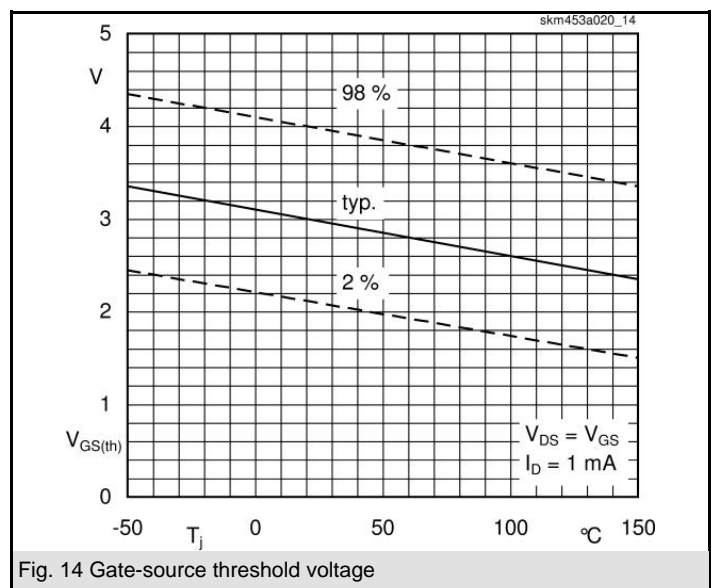
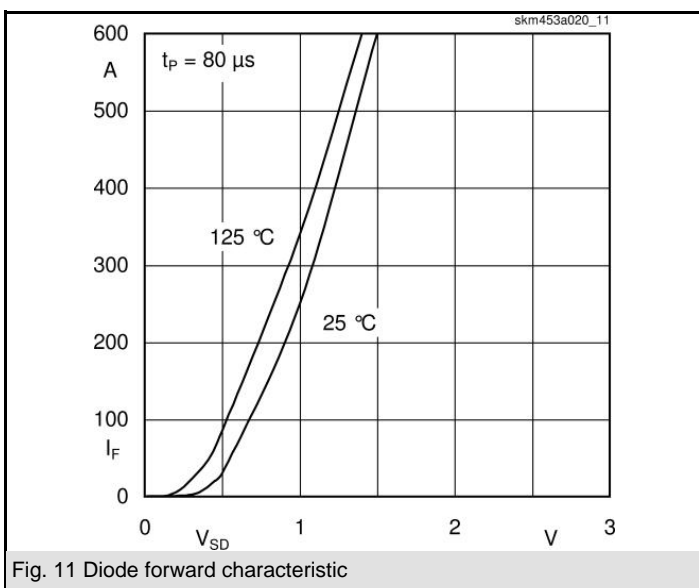
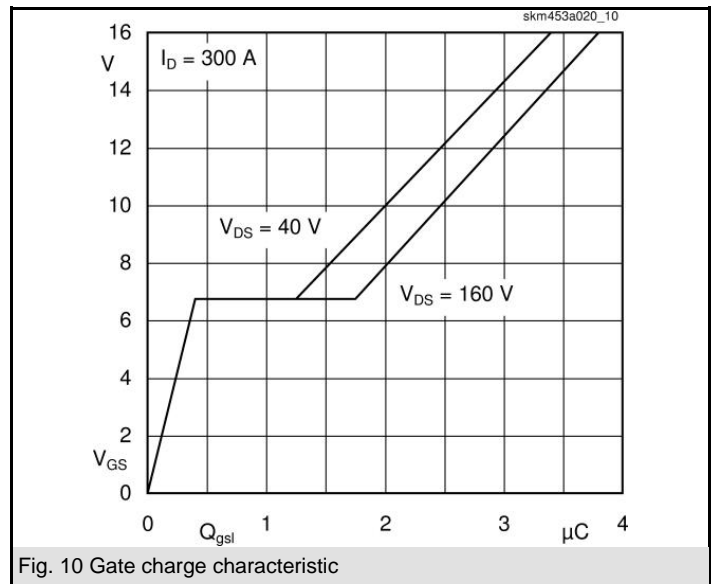
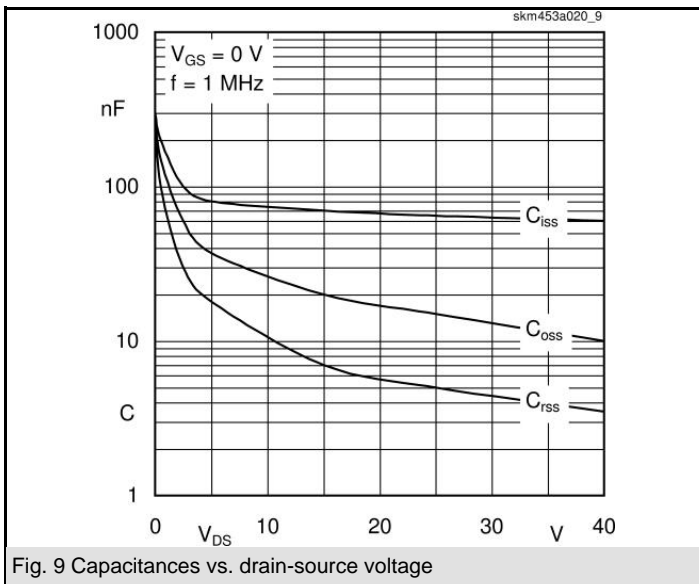
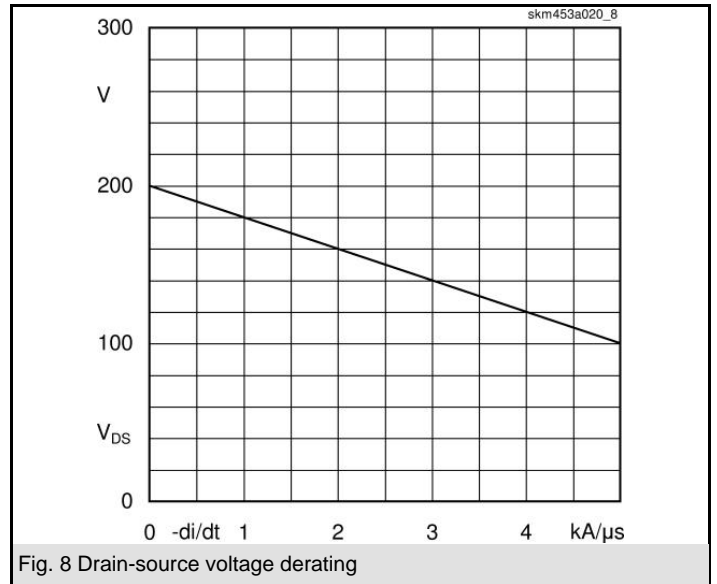
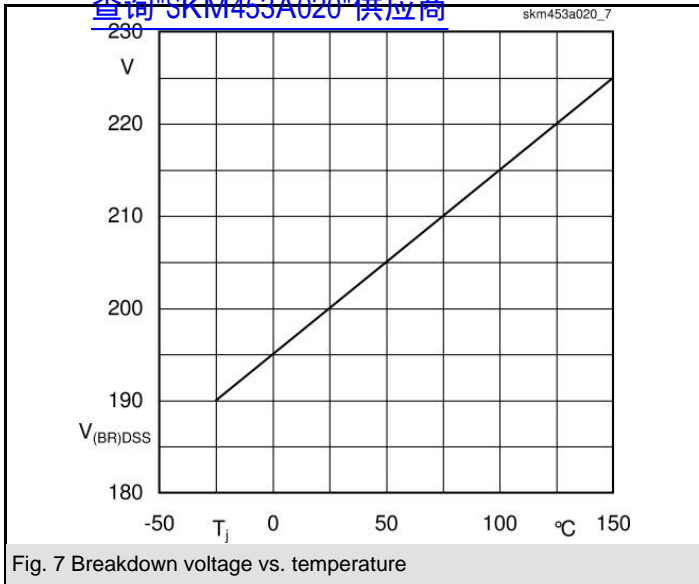
Absolute Maximum Ratings		T _c = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
V _{DS}		200	V
I _D	T _s = 25 (80) °C	450 (400)	A
I _{DM}	1 ms	1350	A
V _{GS}		± 20	V
T _{vj} (T _{stg})		- 40 ... +150 (125)	°C
V _{isol}	AC, 1 min.	2500	V
Inverse diode			
I _F = - I _S		450	A
I _{FM} = - I _{SM}		1600	A

Characteristics		T _c = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
V _{(BR)DSS}	V _{GS} = 0 V, I _D = 0,5 mA	200			V
V _{GS(th)}	V _{GS} = V _{DS} , I _D = 1 mA	2,1	3	4	V
I _{DSS}	V _{GS} = 0 V, V _{DS} = 200 V, T _j = 25 (125) °C			250 (2500)	µA
I _{GSS}	V _{GS} = 20 V, V _{DS} = 0 V			100	nA
R _{DS(on)}	V _{GS} = 10 V, I _D = 300 A		3,8	4,3	mΩ
g _{fs}	V _{DS} = 25 V, I _D = 300 A		400		S
C _{CHC}	V _{GS} = 0, V _{DS} = 25 V, f = 1 MHz		250		pF
C _{iss}			67	78	nF
C _{oss}			13	15	nF
C _{rss}			5	7	nF
L _{DS}				20 (60)	nH
t _{d(on)}	V _{DD} = 30 V, I _D = 300 A,		100		ns
t _r	V _{GS} = 10 V, R _G = 2 Ω		100		ns
t _{d(off)}			700		ns
t _f			250		ns
Inverse diode					
V _{SD}	I _F = 600 A; V _{GS} = 0 V			1,5	V
t _{rr}	T _j = 25 (150) °C		160		ns
Q _{rr}	T _j = 25 °C		25		µC
I _{rr}	T _j = 150 °C				A
Thermal characteristics					
R _{th(j-c)}	per MOSFET			0,06	K/W
R _{th(c-s)}	M _s , surface, per module			0,038	K/W
Mechanical data					
M _s	to heatsink (M6)	3		5	Nm
M _t	for terminals (M5)	2,5		5	Nm
w				325	g

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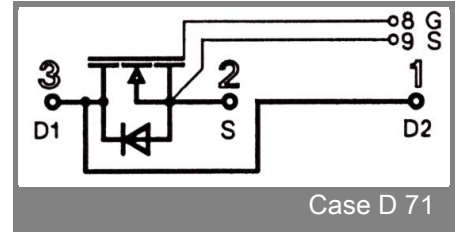
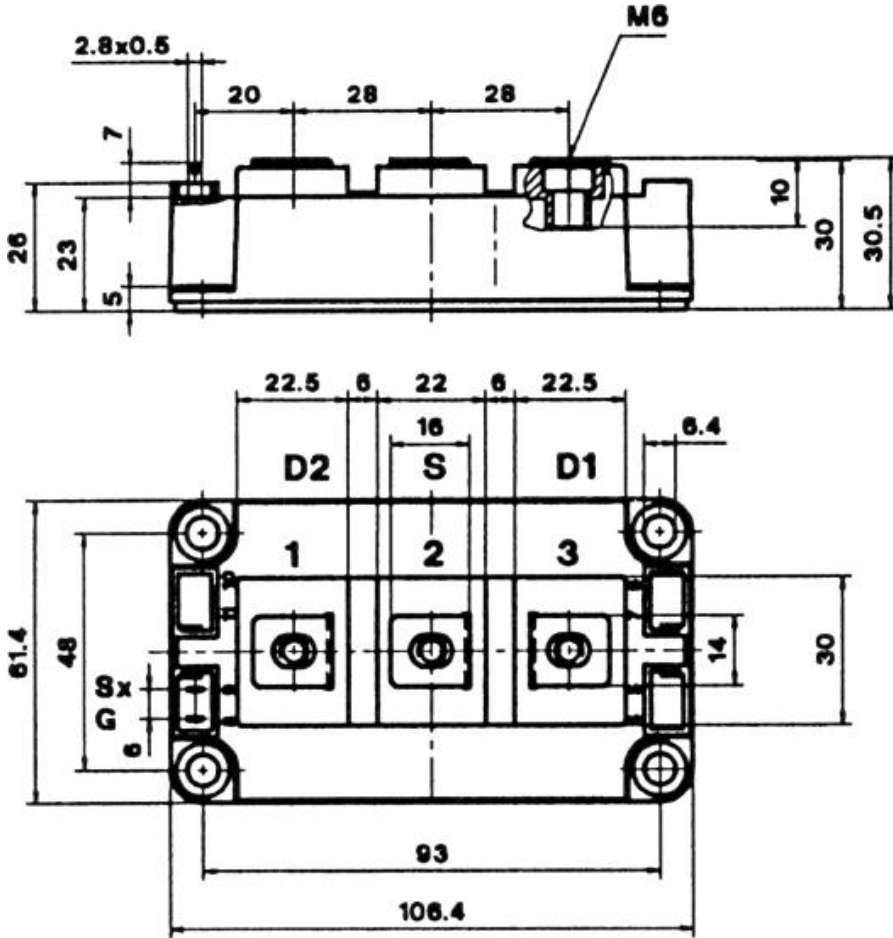
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UL Recognized File no. E-63-532
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Dimensions in mm



Case D 71

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.