

SEMITOP®3

MOSFET Module

SK40MH60

Target Data

Features

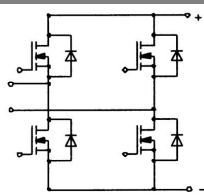
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- COOLMos technology
- Short internal connections and low inductance case

Typical Applications

- Welding generator
- For welding current up to 150A

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

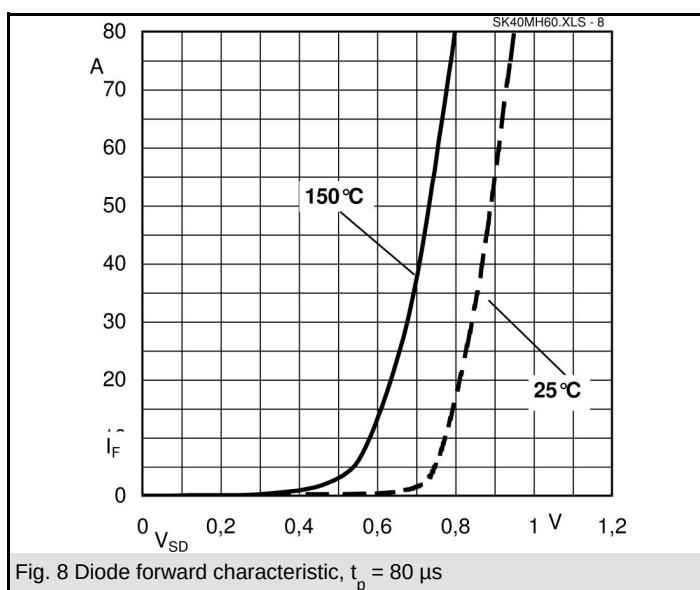
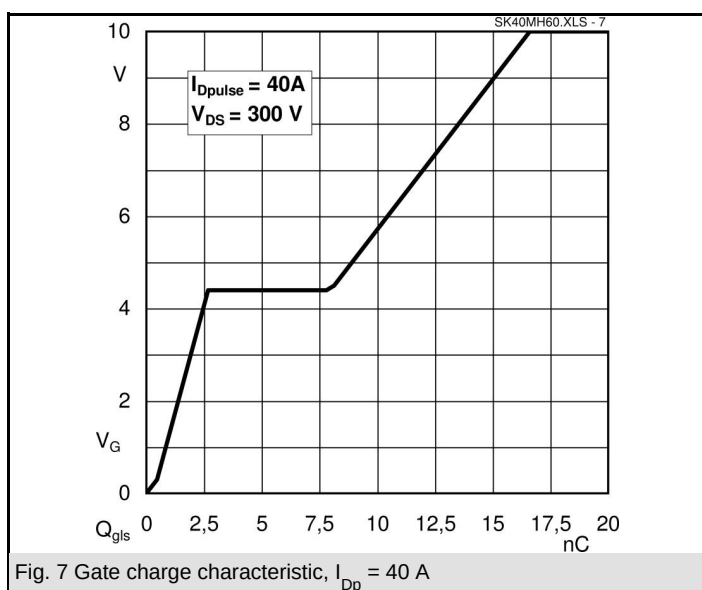
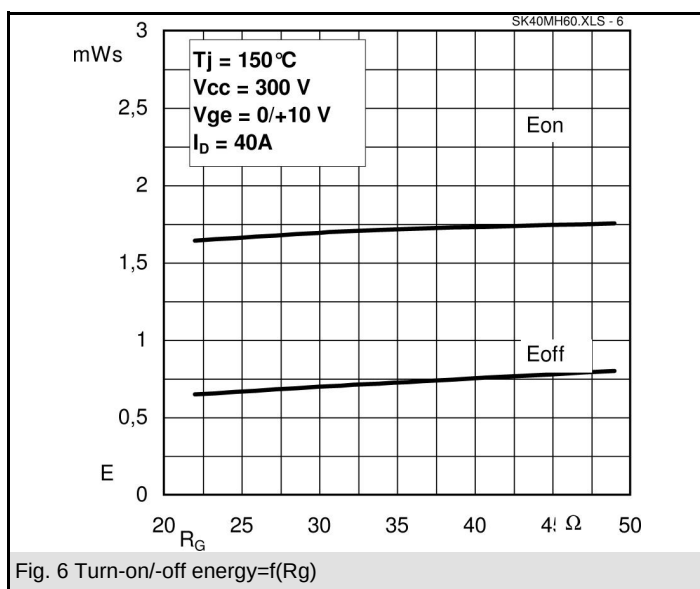
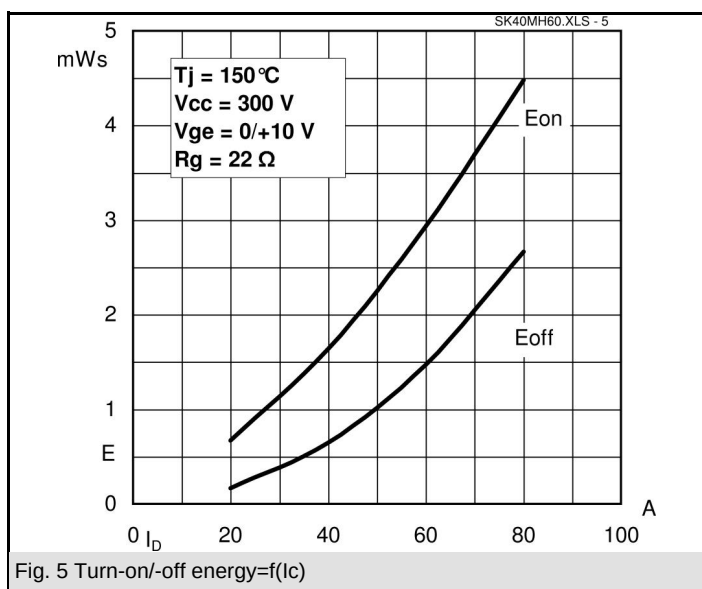
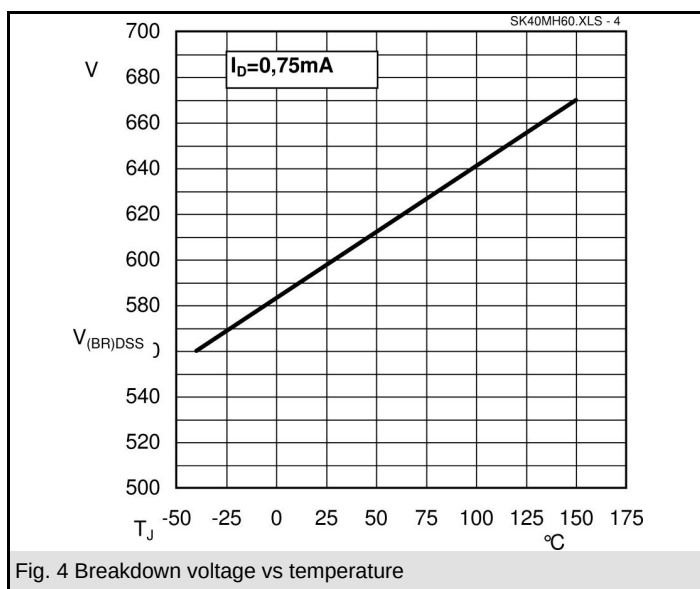
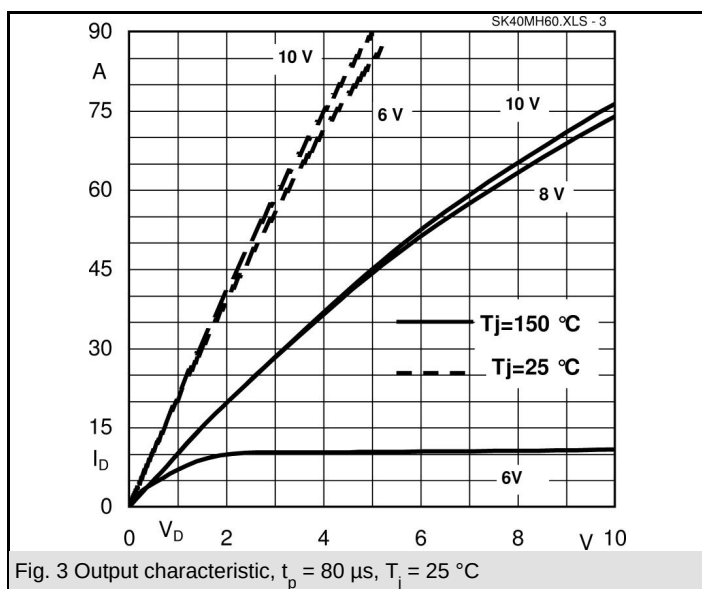
2) T_j=175°C

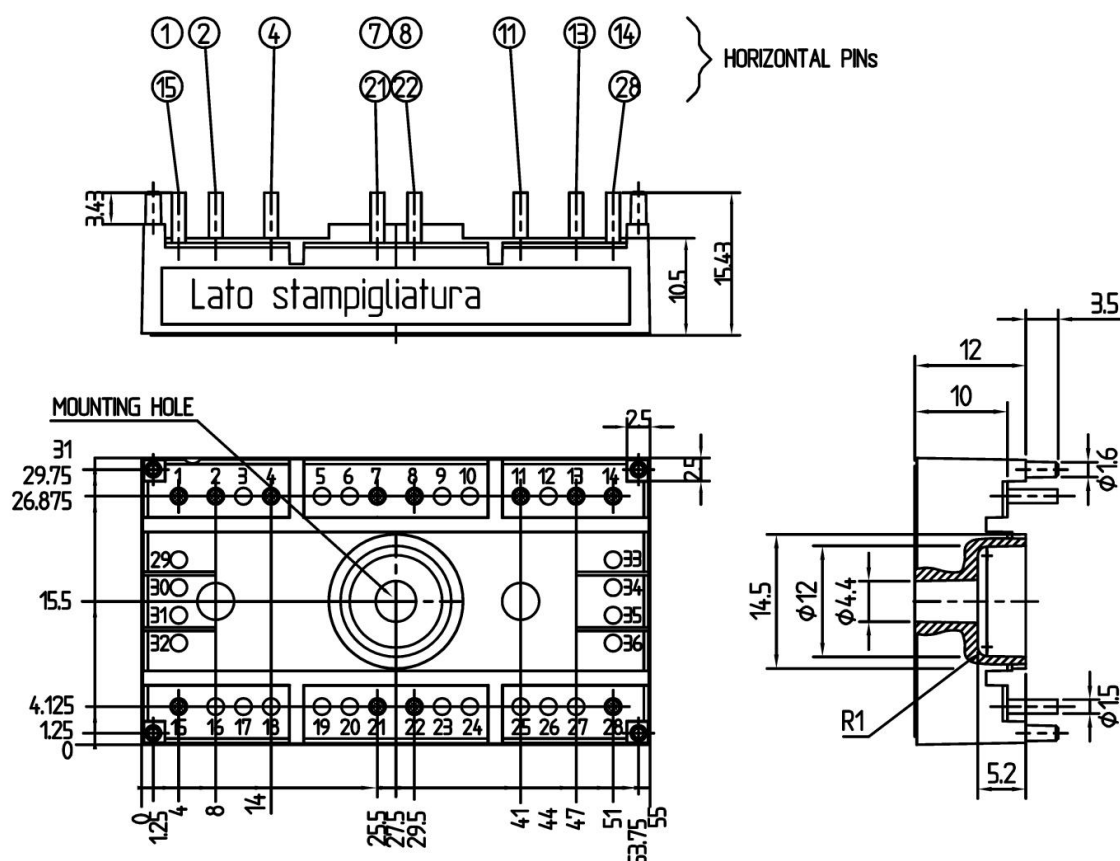


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Absolute Maximum Ratings		T _s = 25 °C, unless otherwise specified	
Symbol	Conditions	Values	Units
MOSFET			
V _{DSS}		600	V
V _{GSS}		± 20	V
I _D	T _s = 25 (80) °C; 1),2)	40 (30)	A
I _{DM}	t _p < 1 ms; T _s = (80) °C; 1)	(60)	A
T _j		- 40 ... + 150	°C
Inverse diode			
I _F = - I _D	T _s = 25 (80) °C;	40 (30)	A
I _{FM} = - I _{DM}	t _p < 1 ms; T _s = (80) °C;	(60)	A
T _j		- 40 ... + 150	°C
Freewheeling CAL diode			
I _F = - I _D	T _s = °C		A
T _j			°C
T _{stg}		- 40 ... + 150	°C
T _{sol}	Terminals, 10 s	260	°C
V _{isol}	AC, 1 min (1s)	2500 / 3000	V

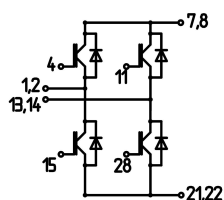
Characteristics		T _s = 25 °C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
MOSFET					
V _{(BR)DSS}	V _{GS} = 0 V, I _D = 0,5 mA	600			V
V _{GS(th)}	V _{GS} = V _{DS} ; I _D = 0,5 mA	2,5	3	3,5	V
I _{DSS}	V _{GS} = 0 V; V _{DS} = V _{DSS} ; T _j = 25 (150) °C		(100)	10	µA
I _{GSS}	V _{GS} = ±20V; V _{DS} = 0 V			200	nA
R _{DS(on)}	I _D = 36 A; V _{GS} = 10 V; T _j = 25 °C		49,5		mΩ
R _{DS(on)}	I _D = 36 A; V _{GS} = 10 V; T _j = 125 °C		120		mΩ
C _{CHC}	per MOSFET				pF
C _{iss}	under following conditions:		5,6		nF
C _{oss}	V _{GS} = 0 V; V _{DS} = 25 V; f = 1 MHz		0,26		nF
C _{rss}			0,26		nF
L _{DS}					nH
t _{d(on)}	under following conditions:		61		ns
t _r	V _{DD} = 300 V; V _{GS} = 10 V; I _D = 40 A		76		ns
t _{d(off)}	R _G = 22 Ω		282		ns
t _f			35		ns
R _{th(j-s)}	per MOSFET (per module)		0,64		K/W
Inverse diode					
V _{SD}	I _F = 36 A; V _{GS} = 0 V; T _j = 50 °C		0,9	1,2	V
I _{RRM}	under following conditions:		27		A
Q _{rr}	I _F = 40 A; T _{vj} = 150 °C; R _G = 22 Ω		2,7		µC
t _{rr}	V _R = 300 A; di/dt = 1000 A/µs		200		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	2,25		2,5	Nm
w			30		g
Case	SEMITOP®3		T 99		





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

Case T 99



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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.