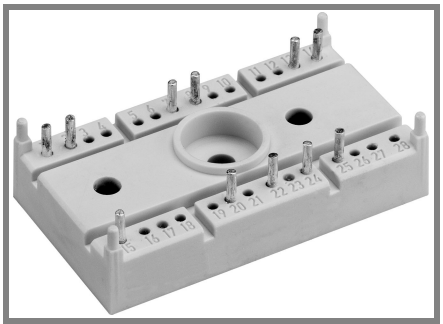
SK 150 MHK 055 T MOSFET, TRANSISTOR



SEMITOP® 3

Mosfet Module

SK 150 MHK 055 T

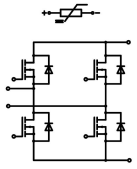
Target Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench technology
- Short internal connections and low inductance case
- Integrated PTC temperature sensor

Typical Applications

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



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Absolute Maximum Ratings	T_s = 25 °C, unless otherwise specified		
Symbol	**Conditions**	**Values**	**Units**
MOSFET			
V_{DSS}		55	V
V_{GSS}		±20	V
I_D	T_s = 25 (80) °C;	240 (150)	A
I_{DM}	t_p < 1 ms; T_s = 25 (80) °C;	340 (250)	A
T_j		-40...+150	°C
Inverse diode			
I_F = - I_D	T_s = 25 (80) °C;	240 (150)	A
I_{FM} = - I_{DM}	t_p < 1 ms; T_s = 25 (80) °C;	340 (250)	A
T_j		-40...+150	°C
Freewheeling CAL diode			
I_F = - I_D	T_s = °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 = 0,25 mA	55			V
$V_{GS(th)}$	V_{GS} = V_{DS}; I_D = 0,25 mA	2,5	3,2	4,5	V
I_{DSS}	V_{GS} = 0 V; V_{DS} = V_{DSS}; T_j = 25 (125) °C			1	µA
I_{GSS}	V_{GS} = ± 20V ;V_{DS} = 0 V			100	nA
$R_{DS(on)}$	I_D = 5 A; V_{GS} = 10 V; T_j = 25 °C		1,1	1,5	mΩ
$R_{DS(on)}$	I_D = 5 A; V_{GS} = 10 V; T_j = 125 °C		1,9	2,6	mΩ
C_{CHC}	per MOSFET				pF
C_{iss}	under following conditions:		21,2		nF
C_{oss}	V_{GS} = 0 V; V_{DS} = 25 V; f = 1 MHz		3,3		nF
C_{rss}			1,6		nF
L_{DS}					nH
$t_{d(on)}$	under following conditions:		40		ns
t_r	V_{DD} = 30 V; V_{GS} = 10 V; I_D = 70 A		180		ns
$t_{d(off)}$	R_G = 2,5 Ω		70		ns
t_f			110		ns
$R_{th(j-s)}$	per MOSFET (per module)			0,8	K/W
Inverse diode					
V_{SD}	I_F = 5 A; V_{GS} = 0 V; T_j = 25 °C		0,7	1,5	V
I_{RRM}	under following conditions:		8		A
Q_{rr}	I_F = 150 A; T_{vj} = 25 °C; R_G = 2,5 Ω		0,35		µC
t_{rr}	V_R = 30 A; di/dt = 100 A/µs		80		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			30		g
Case	SEMITOP® 3		T 64		

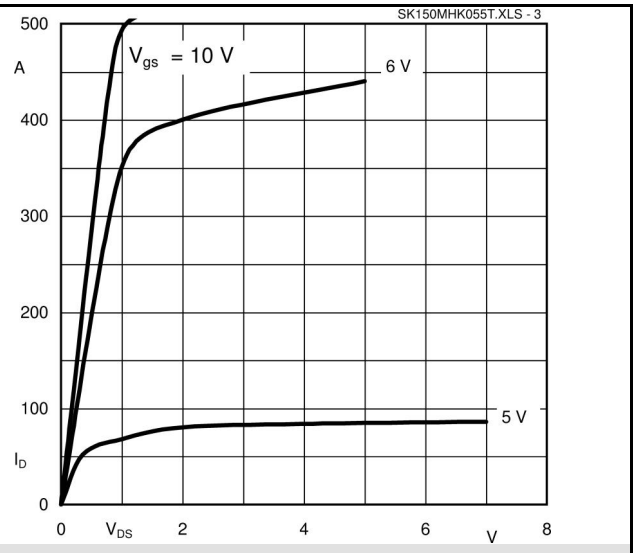


Fig. 3 Output characteristic, t_p = 80 µs, T_j = 25 °C

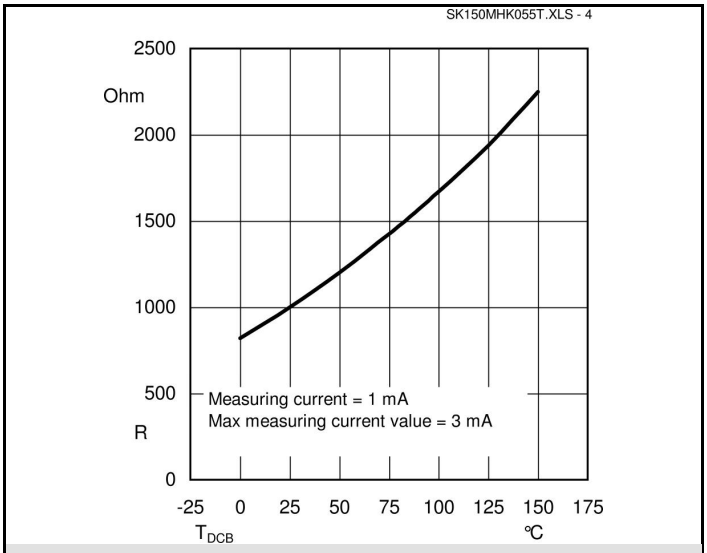


Fig. 4 Typ. PTC Characteristic

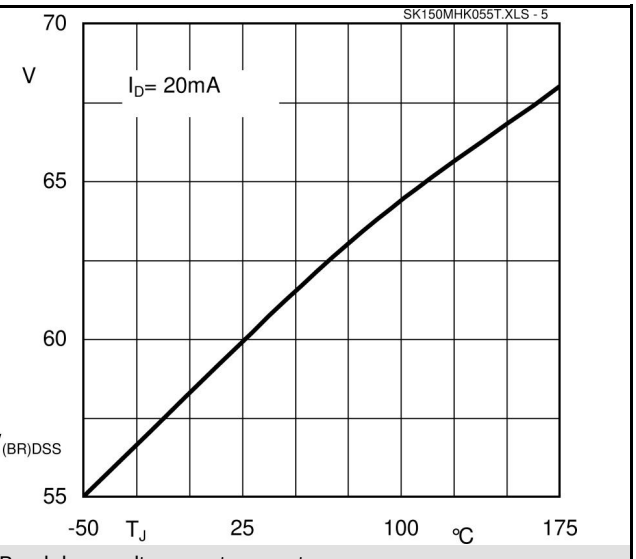


Fig. 5 Breakdown voltage vs. temperature

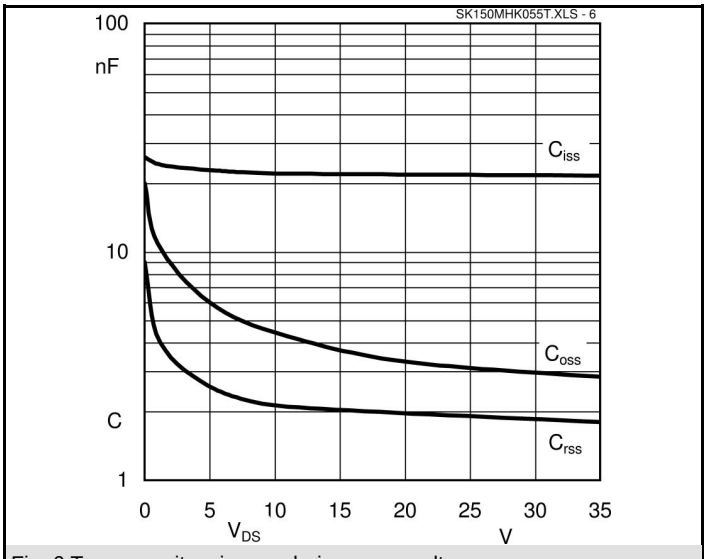


Fig. 6 Typ. capacitancies vs. drain-source voltage

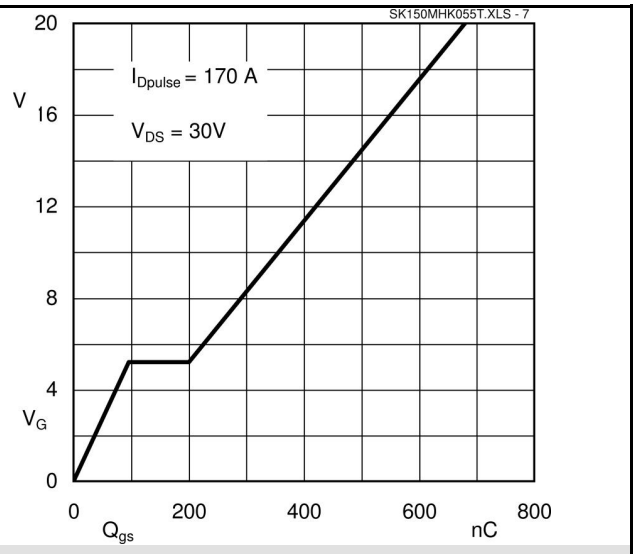


Fig. 7 Gate charge characteristic

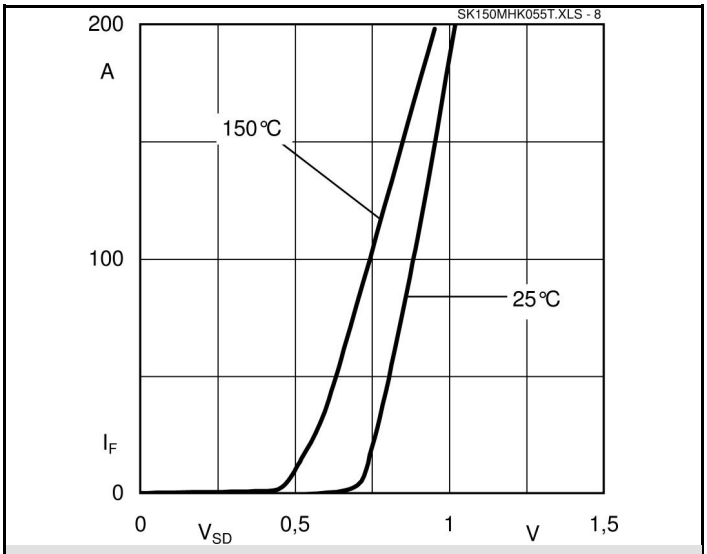
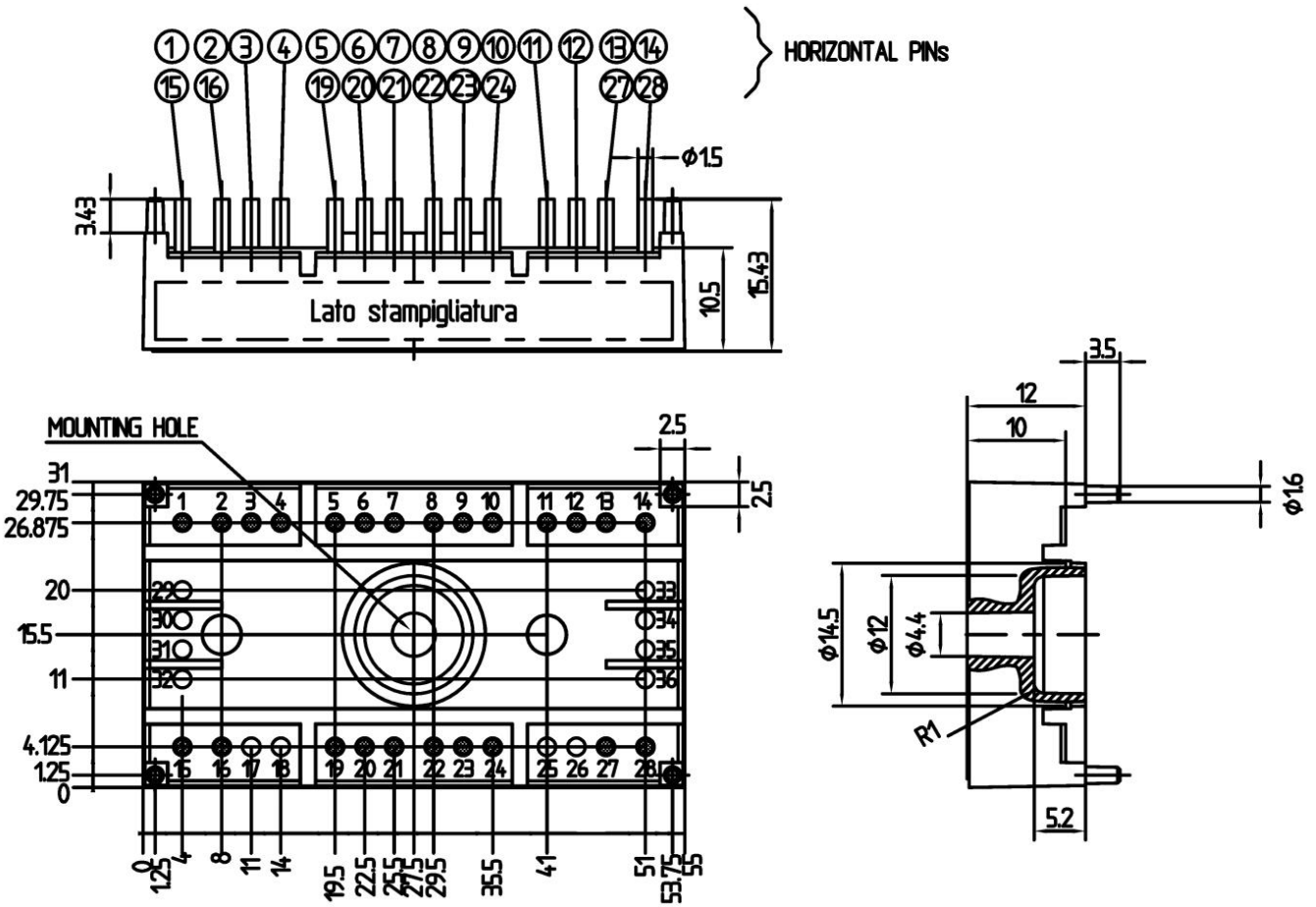


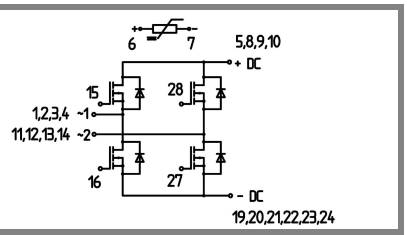
Fig. 8 Diode forward characteristic, t_p = 80 µs

Dimensions in mm



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

Case T64



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

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