

# SKM 313B010



**SEMITRANS™ 3**

## Power MOSFET Modules

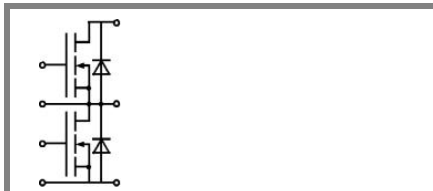
### SKM 313B010

#### 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 (13mm) and creepage distances (20mm)
- UL recognized, file no. E 63 532

#### Typical Applications

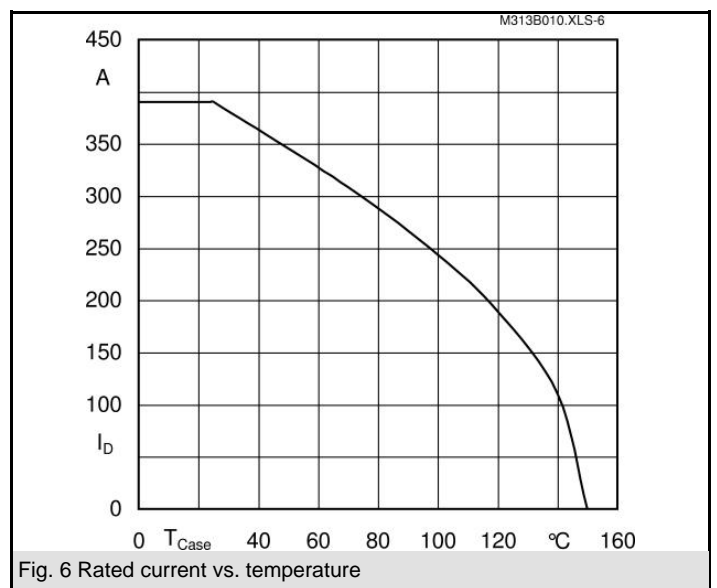
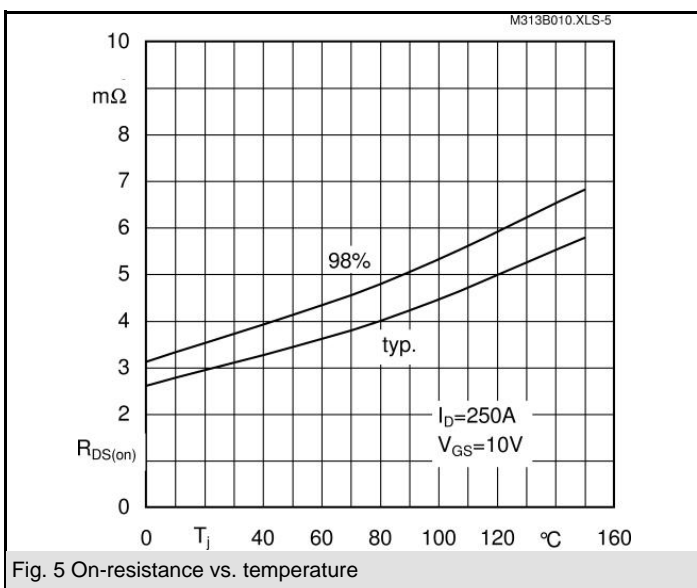
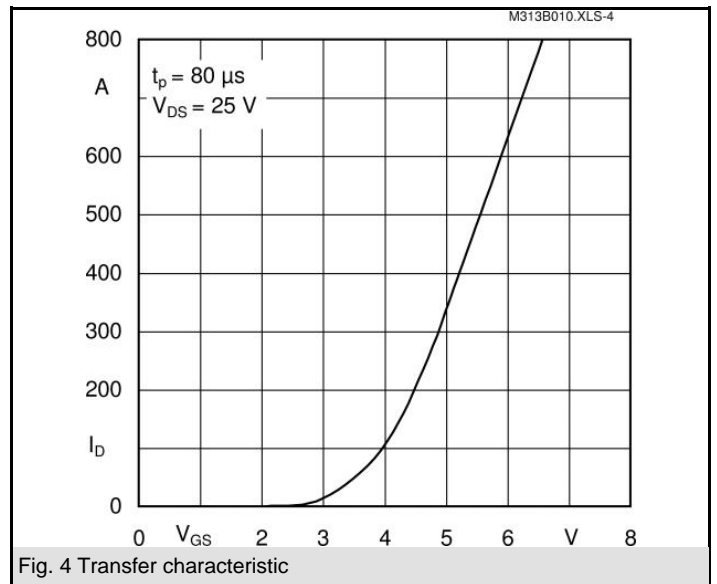
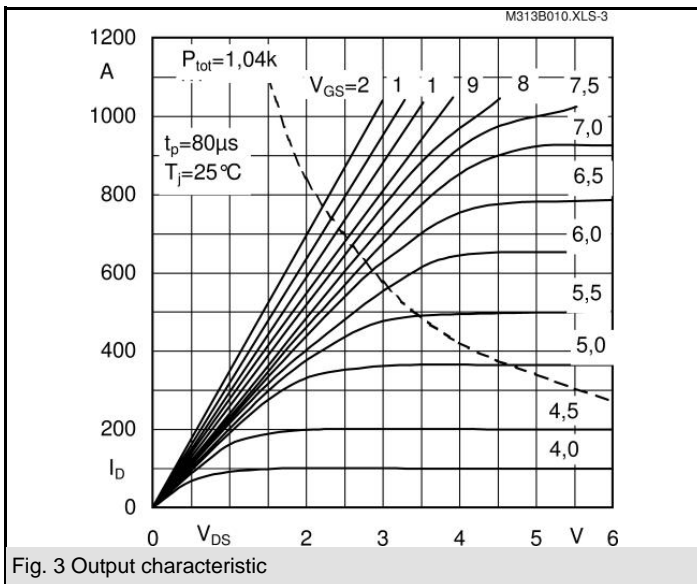
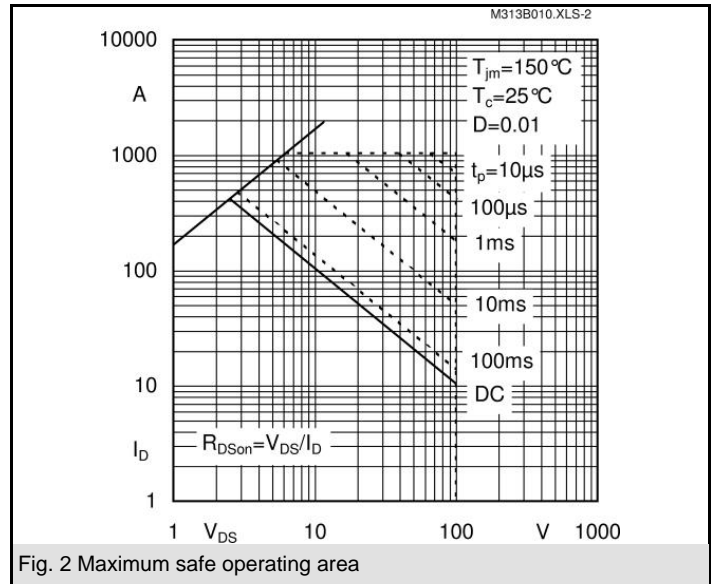
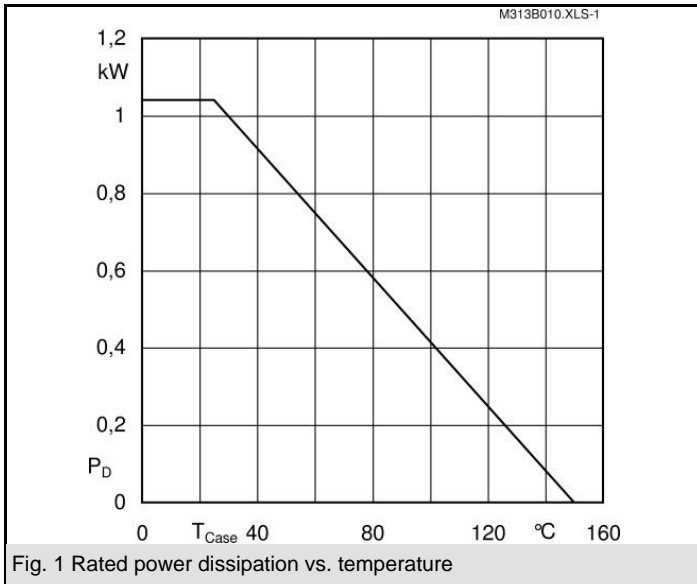
- Switched mode power supplies
- DC servo and robot drives
- DC choppers
- UPS equipment
- Plasma cutting
- Not suitable for linear amplification

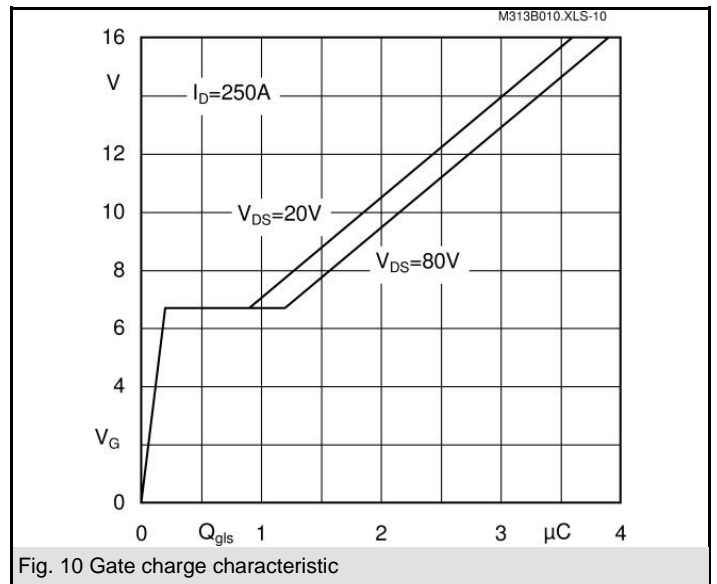
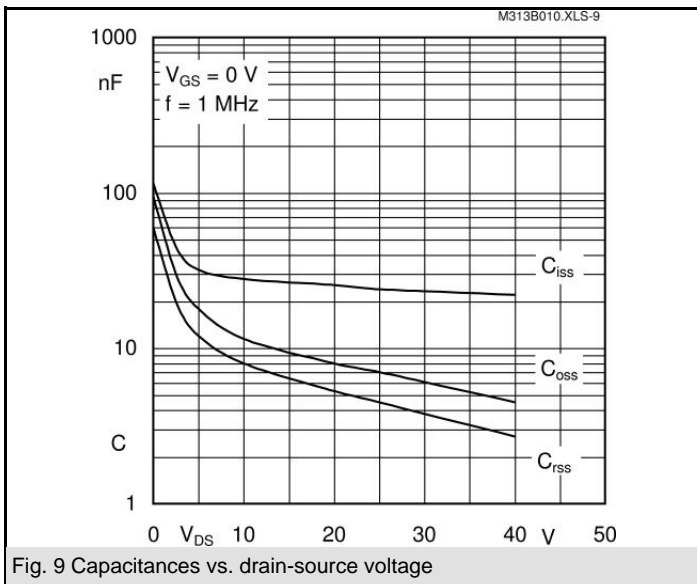
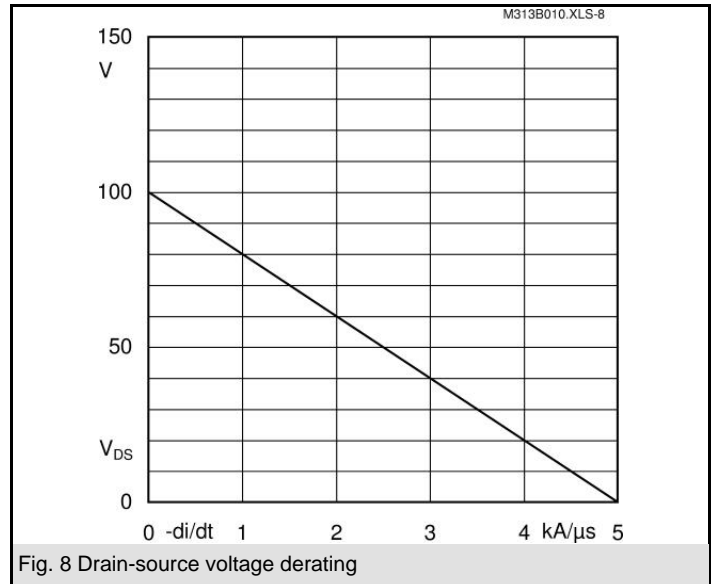
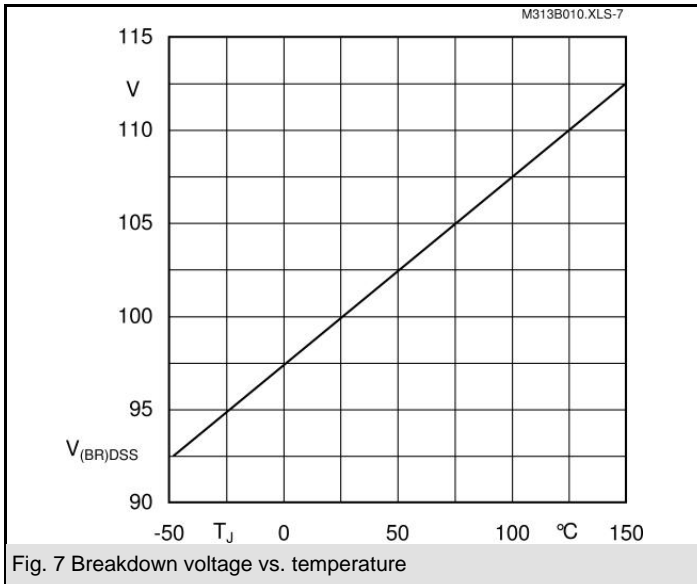


**MB**

Absolute Maximum Ratings		$T_c = 25\text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
$V_{DS}$		100	V
$I_D$	$T_s = 25\text{ (80) °C}$	390 (290)	A
$I_{DM}$	1 ms	1170	A
$V_{GS}$		$\pm 20$	V
$T_{vj}$ ( $T_{stg}$ )		- 40 ... + 150 (125)	°C
$V_{isol}$	AC, 1 min.	2500	V
Inverse diode			
$I_F = - I_S$		380	A
$I_{FM} = - I_{SM}$		1140	A

Characteristics		$T_c = 25\text{ °C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$ , $I_D = 0,5\text{ mA}$	100			V
$V_{GS(th)}$	$V_{GS} = V_{DS}$ , $I_D = 5\text{ mA}$	2,1	3	4	V
$I_{DSS}$	$V_{GS} = 0\text{ V}$ , $V_{DS} = 100\text{ V}$ , $T_j = 25\text{ (125) °C}$			100	$\mu\text{A}$
$I_{GSS}$	$V_{GS} = 20\text{ V}$ , $V_{DS} = 0\text{ V}$			1000	nA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$ , $I_D = 300\text{ A}$		3	3,5	m $\Omega$
$g_{fs}$	$V_{DS} = 25\text{ V}$ , $I_D = 300\text{ A}$	150	200		S
$C_{CHC}$	$V_{GS} = 0$ , $V_{DS} = 25\text{ V}$ , $f = 1\text{ MHz}$			700	pF
$C_{iss}$			24	32	nF
$C_{oss}$			7,3	11	nF
$C_{rss}$			4,3	6,5	nF
$L_{DS}$				20	nH
$t_{d(on)}$	$V_{DD} = 30\text{ V}$ , $I_D = 250\text{ A}$ ,		100		ns
$t_r$	$V_{GS} = \pm 10\text{ V}$ , $R_G = 4,7\ \Omega$		100		ns
$t_{d(off)}$			700		ns
$t_f$			250		ns
Inverse diode					
$V_{SD}$	$I_F = 300\text{ A}$ ; $V_{GS} = 0\text{ V}$		1,2	1,5	V
$t_{rr}$	$T_j = 25\text{ (150) °C}$		160		ns
$Q_{rr}$	$T_j = 25\text{ °C}$		10		$\mu\text{C}$
$I_{rr}$	$T_j = \text{ °C}$				A
Thermal characteristics					
$R_{th(j-c)}$	per MOSFET			0,12	K/W
$R_{th(c-s)}$	$M_s$ , surface $10\ \mu\text{m}$ , per module			0,038	K/W
Mechanical data					
$M_s$	to heatsink (M6)	4		5	Nm
$M_t$	for terminals (M5)	2,5		5	Nm
w				325	g



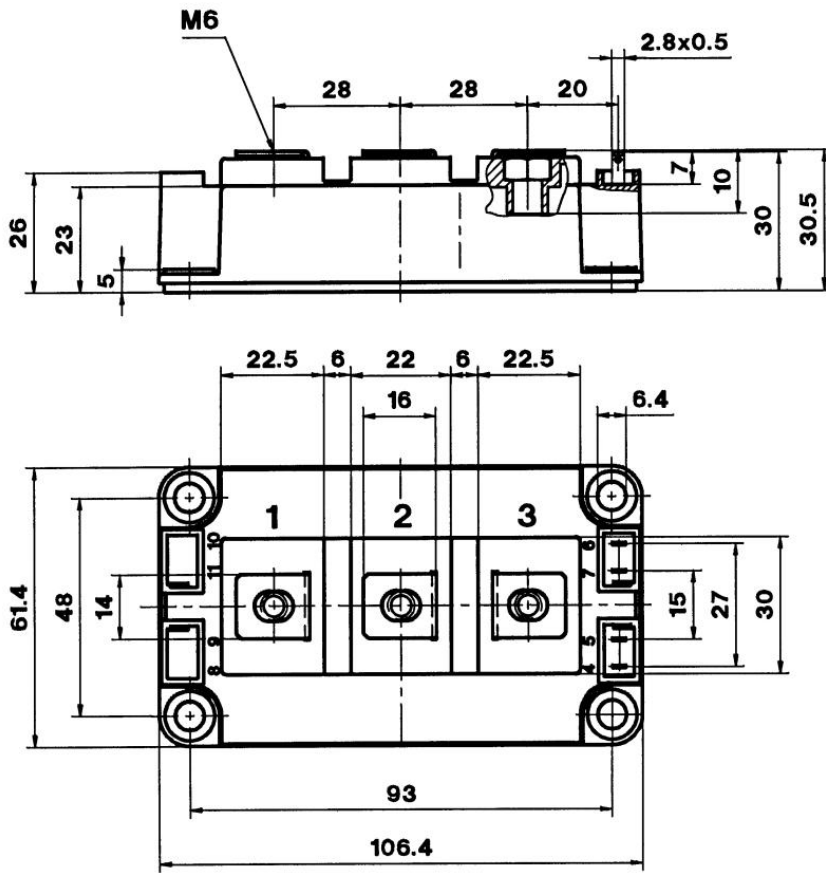


# SKM 313B010

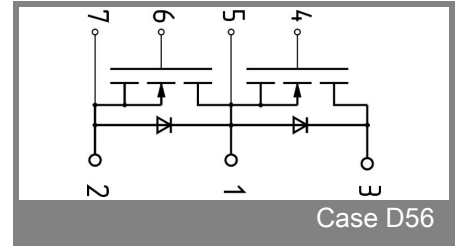
UL Recognized  
File no. E 63 532

Dimensions in mm

CASED56



Case D 56



Case D56

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.