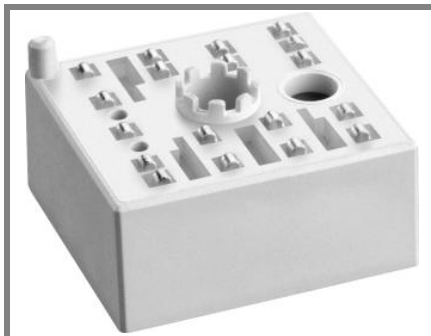


# SKiiP 03AC126V1



MiniSKiiP<sup>®</sup>0

## 3-phase bridge inverter

### SKiiP 03 AC 126 V1

#### Preliminary Data

#### Features

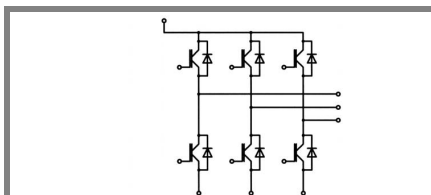
- Fast Trench IGBTs
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

#### Remarks

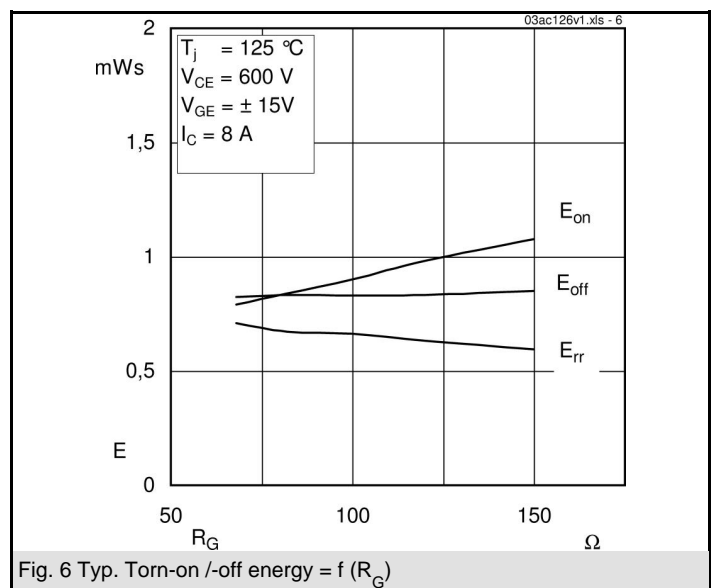
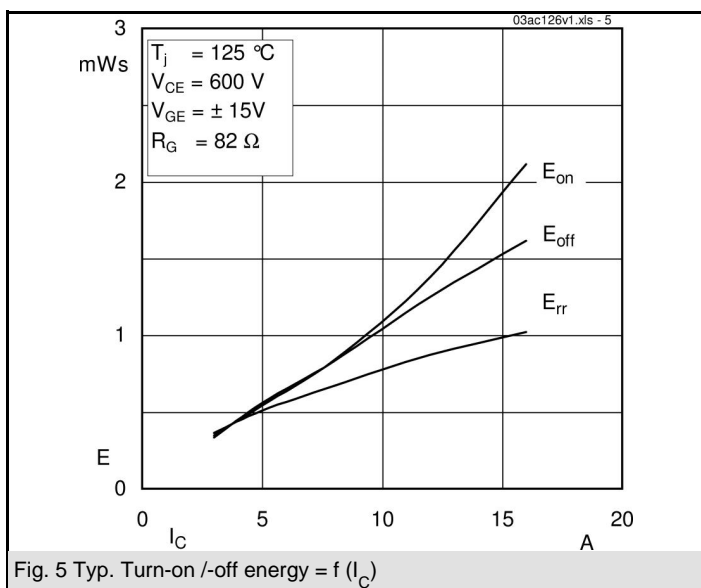
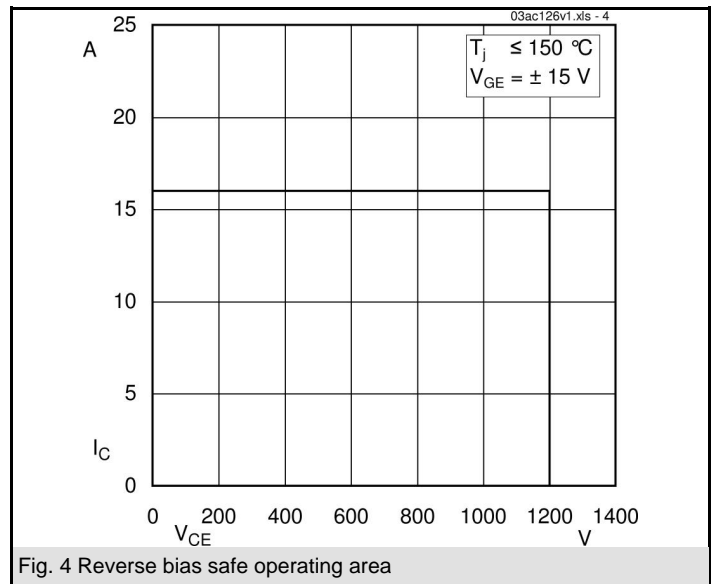
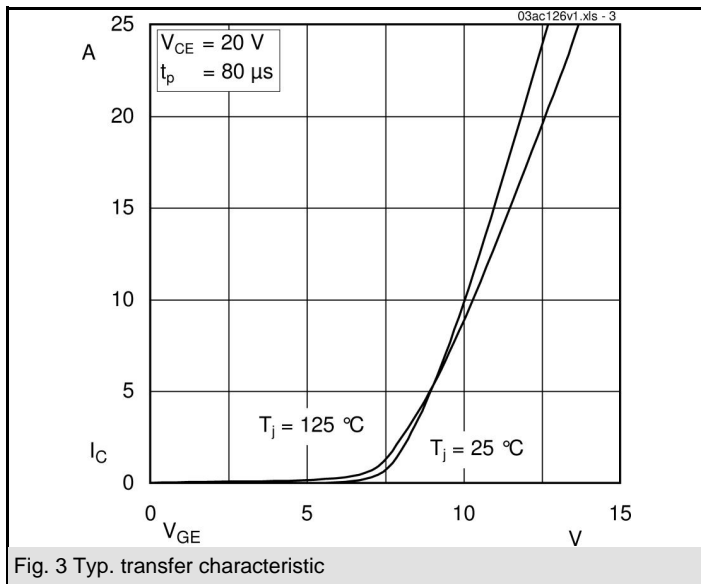
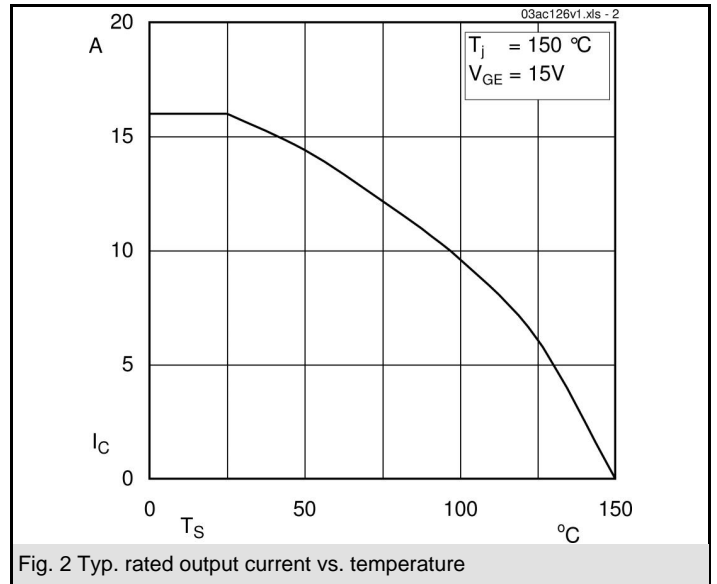
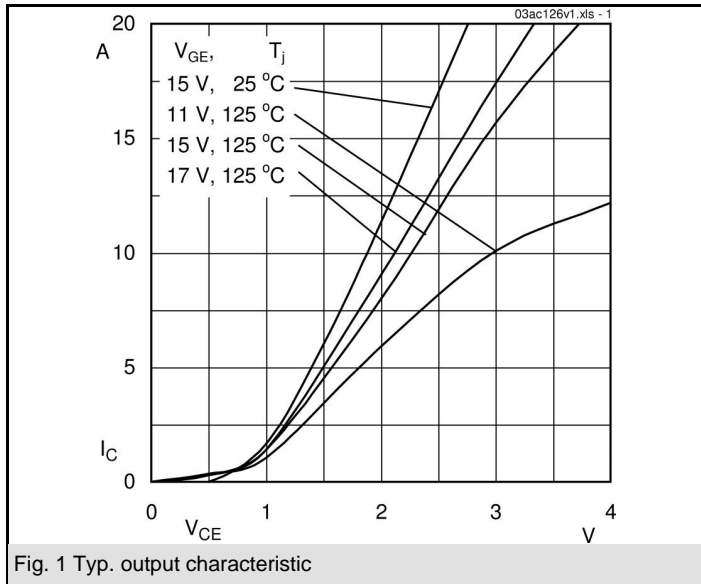
- $V_{CEsat}$ ,  $V_F$  = chip level value
- without T-Sensor

Absolute Maximum Ratings		$T_S = 25\text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
<b>IGBT - Inverter</b>			
$V_{CES}$	$T_S = 25\text{ (70) °C}$ $t_p \leq 1\text{ ms}$	1200	V
$I_C$		16 (15)	A
$I_{CRM}$		16	A
$V_{GES}$		$\pm 20$	V
$T_j$		-40...+150	°C
<b>Diode - Inverter</b>			
$I_F$	$T_S = 25\text{ (70) °C}$ $t_p \leq 1\text{ ms}$	14 (11)	A
$I_{FRM}$		16	A
$T_j$		-40...+150	°C
$I_{tRMS}$	per power terminal (20 A / spring)	20	A
$T_{stg}$	$T_{op} \leq T_{stg}$	-40...+125	°C
$V_{isol}$	AC, 1 min.	2500	V

Characteristics		$T_S = 25\text{ °C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT - Inverter</b>					
$V_{CEsat}$	$I_{Cnom} = 8\text{ A}$ , $T_j = 25\text{ (125) °C}$		1,7 (2)	2,1 (2,4)	V
$V_{GE(th)}$	$V_{GE} = V_{CE}$ , $I_C = 0,3\text{ mA}$	5	5,8	6,5	V
$V_{CE(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,9)	1,2 (1,1)	V
$r_T$	$T_j = 25\text{ (125) °C}$		87 (138)	113 (162)	mΩ
$C_{ies}$	$V_{CE} = 25\text{ V}$ , $V_{GE} = 0\text{ V}$ , $f = 1\text{ MHz}$		0,7		nF
$C_{oes}$	$V_{CE} = 25\text{ V}$ , $V_{GE} = 0\text{ V}$ , $f = 1\text{ MHz}$		0,1		nF
$C_{res}$	$V_{CE} = 25\text{ V}$ , $V_{GE} = 0\text{ V}$ , $f = 1\text{ MHz}$		0,1		nF
$R_{th(j-s)}$	per IGBT		1,5		K/W
$t_{d(on)}$	under following conditions		40		ns
$t_r$	$V_{CC} = 600\text{ V}$ , $V_{GE} = \pm 15\text{ V}$		25		ns
$t_{d(off)}$	$I_{Cnom} = 8\text{ A}$ , $T_j = 125\text{ °C}$		370		ns
$t_f$	$R_{Gon} = R_{Goff} = 82\text{ Ω}$		85		ns
$E_{on}$	inductive load		0,9		mJ
$E_{off}$			0,9		mJ
<b>Diode - Inverter</b>					
$V_F = V_{EC}$	$I_{Fnom} = 8\text{ A}$ , $T_j = 25\text{ (125) °C}$		1,9 (2)	2,2 (2,4)	V
$V_{(TO)}$	$T_j = 25\text{ (125) °C}$		1 (0,8)	1,1 (0,9)	V
$r_T$	$T_j = 25\text{ (125) °C}$		112 (150)	138 (187)	mΩ
$R_{th(j-s)}$	per diode		2,5		K/W
$I_{RRM}$	under following conditions		13		A
$Q_{rr}$	$I_{Fnom} = 8\text{ A}$ , $V_R = 600\text{ V}$		1,6		μC
$E_{rr}$	$V_{GE} = 0\text{ V}$ , $T_j = 125\text{ °C}$ $di_F/dt = 480\text{ A/μs}$		0,7		mJ
<b>Temperature Sensor</b>					
$R_{ts}$	%, $T_r = (\text{ ) °C}$		( )		Ω
<b>Mechanical Data</b>					
m			21,5		g
$M_s$	Mounting torque	2		2,5	Nm



AC



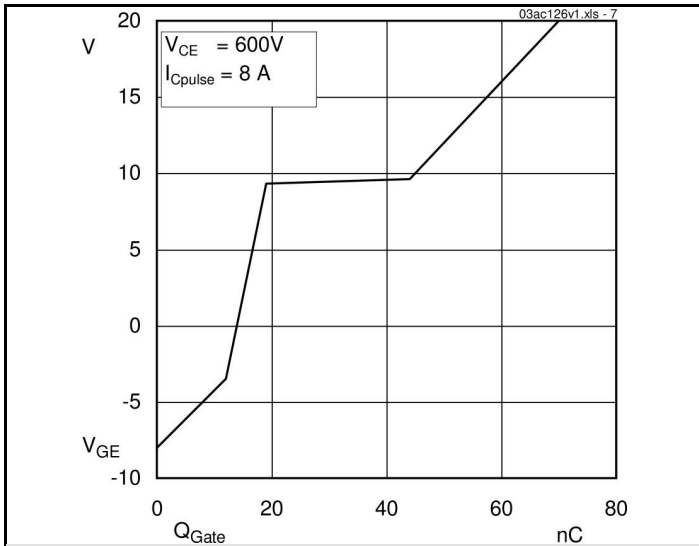


Fig. 7 Typ. gate charge characteristic

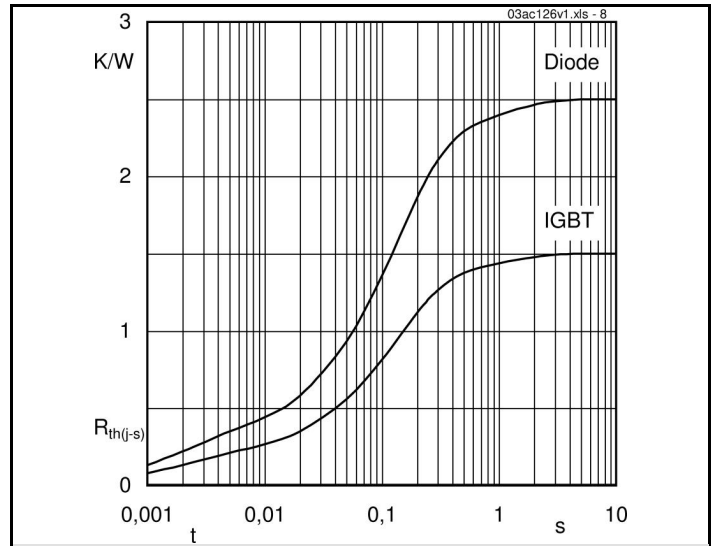


Fig. 8 Typ. thermal impedance

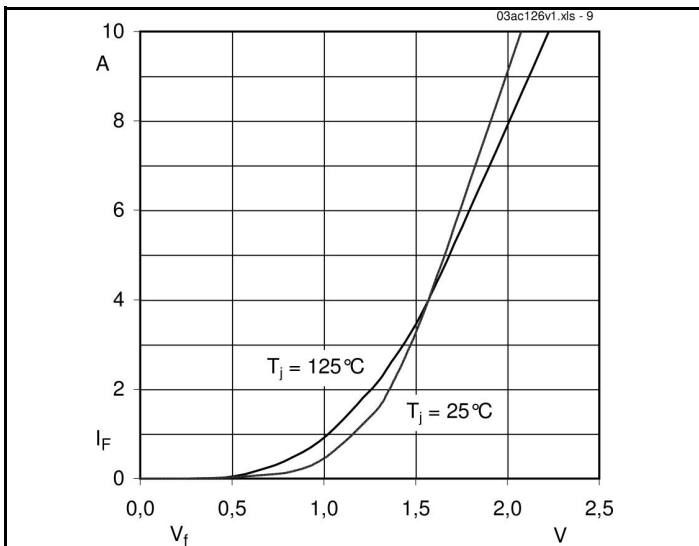


Fig. 9 Typ. freewheeling diode forward characteristic

