

Features:

- n 10us short circuit capability
- n Low switching losses
- n VCE(sat) with Positive temperature coefficient
- n Fast & soft reverse recovery anti-parallel FWD

Typical Applications:

- n Inverter for motor drive(VFD)
- n AC and DC servo drive amplifier
- n Uninterruptible power supply

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min	Type	Max	
V _{CES}	Collector-Emitter voltage	T _j =25°C			1200	V
V _{GES}	Gate-Emitter voltage	T _j =25°C			±20	V
I _C	Collector current	Continuous@ T _C =100°C			30	A
I _{CP}		T _P =1ms			150	A
T _j	Junction temperature	/			150	°C
T _{op}	Operating temperature	/	-40		150	°C
T _{stg}	Storage temperature	/	-40		150	°C
V _{iso}	Isolation between terminal and copper base	T _j =25°C , AC: 1minute	2500			V
I _{CES}	Zero gate voltage collector current	T _j =25°C , V _{CE} =1200V, V _{GE} =0V			1.0	µA
I _{GES}	Gate-Emitter leakage current	T _j =25°C , V _{CE} =0V, V _{GE} =±20V	-0.1		0.1	µA
BV _{CES}		V _{GE} =0V, I _C =4mA	1200			V
V _{GE(th)}	Gate-Emitter threshold voltage	T _j =25°C , V _{CE} =20V, I _C =4mA	5.2	5.8	6.4	V
V _{CE(sat)}	Collector-Emitter saturation voltage	T _j =25°C , V _{GE} =15V, I _C =30A		1.85	2.15	V
R _{Gint}	Integrated gate resistor			3		Ω
Q _g	Gate Charge	T _j =25°C , V _{CE} =600V, I _C =30A, V _{GE} =± 15V		0.20		µC
C _{ies}	Input capacitance	T _j =25°C , V _{CE} =25V, V _{GE} =0V, f=1MHz		1.45		nF
C _{oes}	output capacitance			1.25		nF
C _{res}	Reverse transfer capacitance			0.05		nF
t _{(d)on}	Turn-on time	V _{CC} =600V, I _C =30A, V _{GE} =±15V, R _g =51Ω, Inductive load	T _j =25°C	160		ns
t _r			T _j =125°C	170		ns
	T _j =25°C		30		ns	
t _{(d)off}	T _j =125°C		40		ns	
	T _j =25°C		330		ns	
t _f	T _j =125°C		430		ns	
	T _j =25°C	80		ns		
	T _j =125°C	150		ns		
t _{sc}	Short circuit withstand time	V _{CES} ≤600V, V _{GE} =± 15V		10		µs
V _F	Forward on voltage	T _j =25°C , I _F =30A		1.75	2.15	V
		T _j =125°C , I _F =30A		1.75		V
I _{FRM}	Repetitive peak forward current			60		A
I _{RRM}	Max. reverse recovery current	I _F =30A , V _R =600V T _j =125°C		60		A
t _{rr}	Reverse recovery time	T _j =125°C , I _F =30A, di _F /dt=-1600A/µ s, V _R =600V		289		ns
R _{th(j-c)}	Thermal resistance(per chip)	IGBT		0.95		°C/W
		FWD		1.35		°C/W
R ₂₅	Resistance	T _{Vj} =25°C		5		kΩ

B25/50	$R_2=R_{25} \exp [B25/50(1/T_2-1/(298,15K))]$		3375	K
Outline	256H5P			

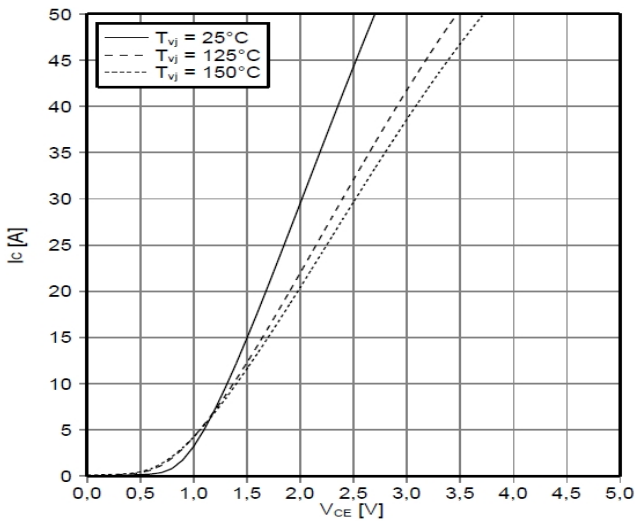


Fig.1 output characteristic IGBT, Inverter

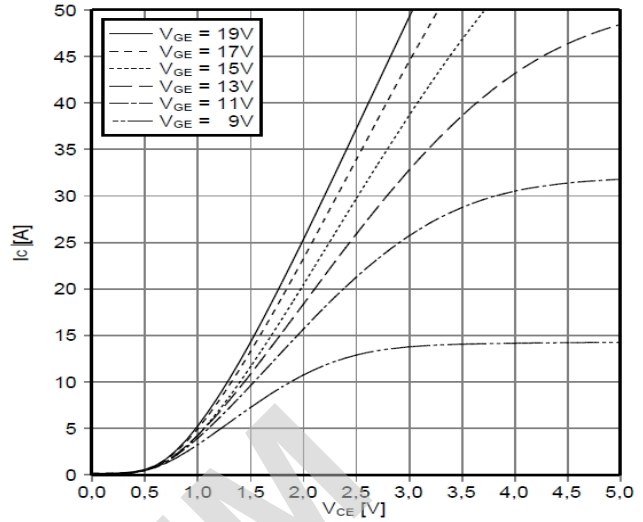


Fig.2 output characteristic IGBT, Inverter

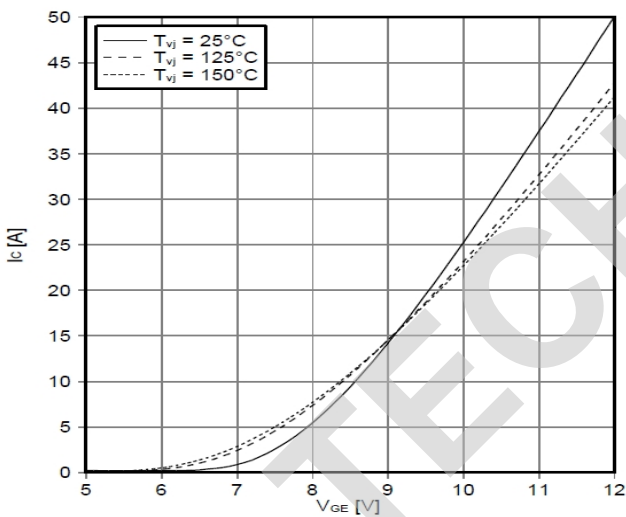


Fig.3 transfer characteristic IGBT, Inverter

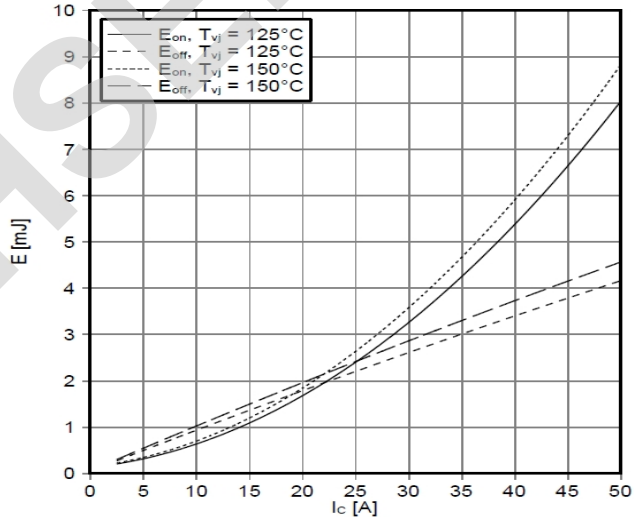


Fig.4 switching losses IGBT, Inverter

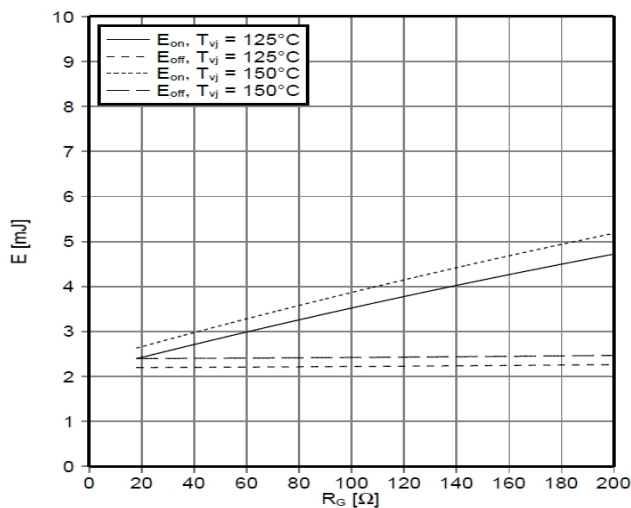


Fig.5 switching losses IGBT, Inverter

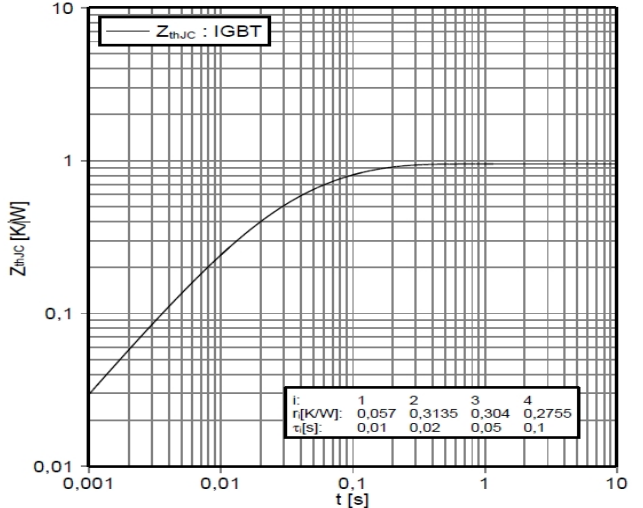


Fig.6 transient thermal impedance IGBT, Inverter

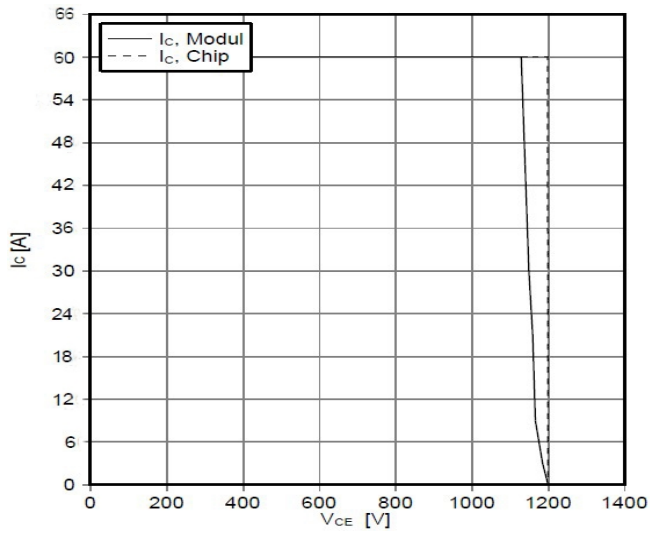


Fig.7 reverse bias safe operating area IGBT, Inverter (RBSOA)

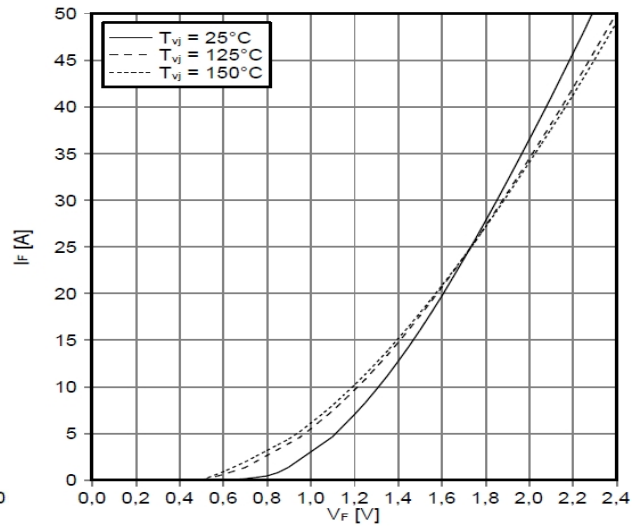


Fig.8 forward characteristic of Diode, Inverter

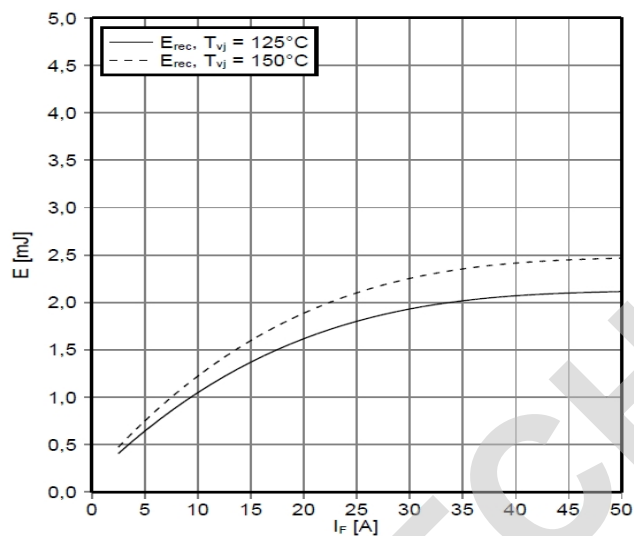


Fig.9 switching losses Diode, Inverter

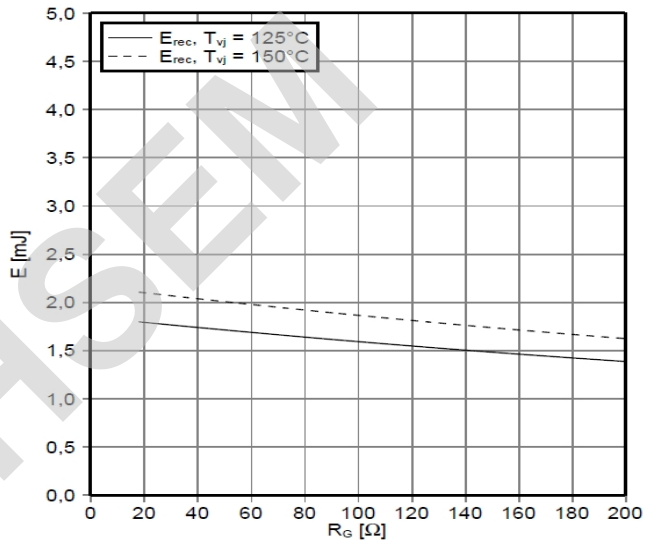


Fig.10 switching losses Diode, Inverter

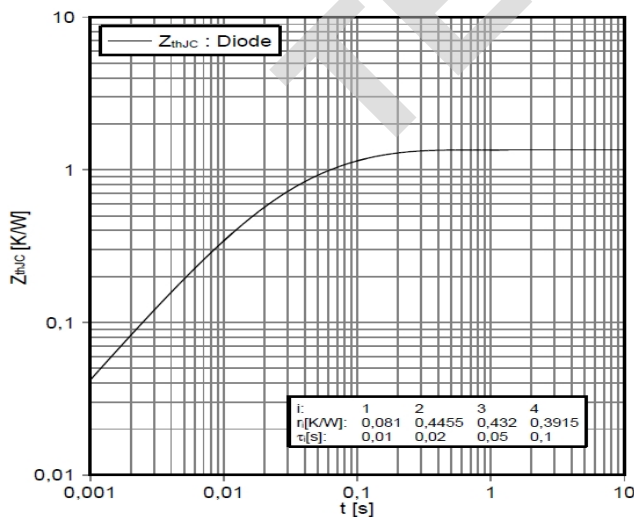


Fig.11 transient thermal impedance Diode, Inverter

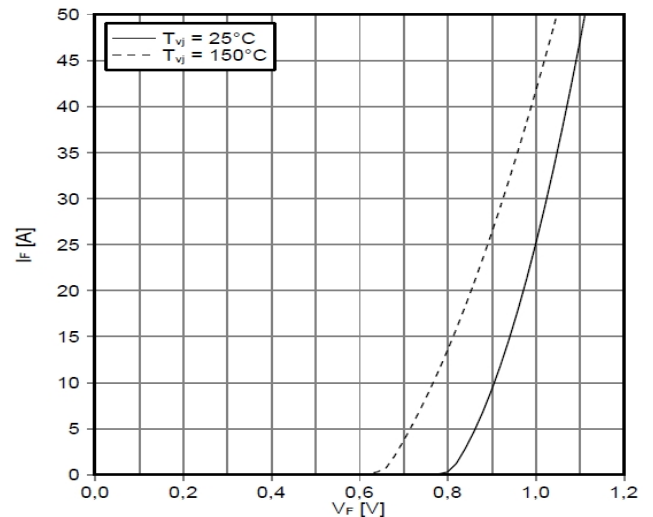


Fig.12 forward characteristic of Diode, Rectifier

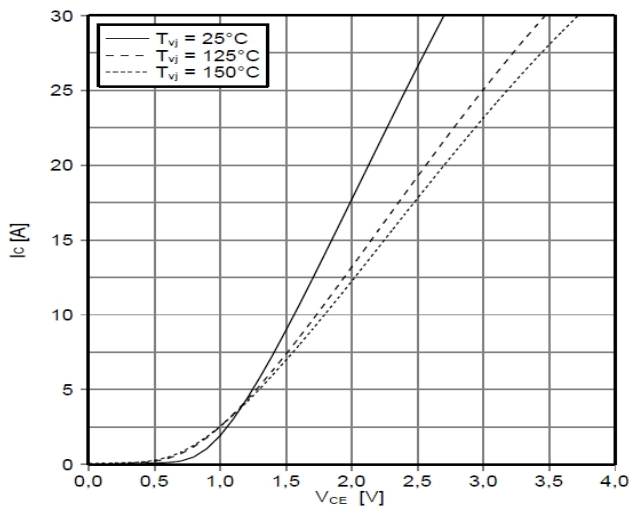


Fig.13 output characteristic IGBT, Brake-Chopper

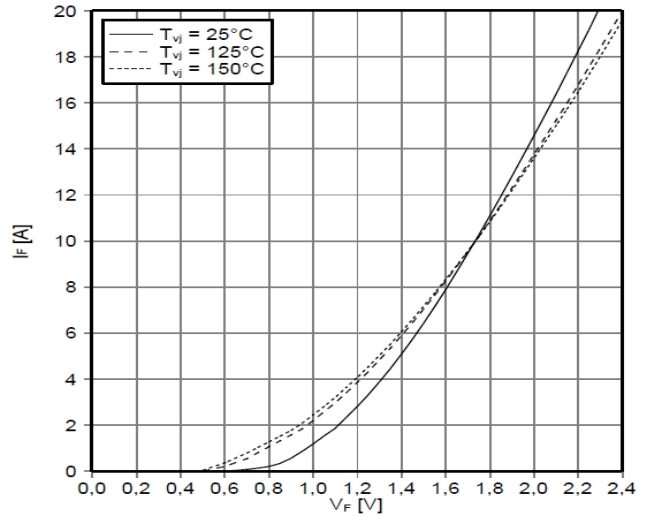


Fig.14 forward characteristic of Diode, Brake-Chopper

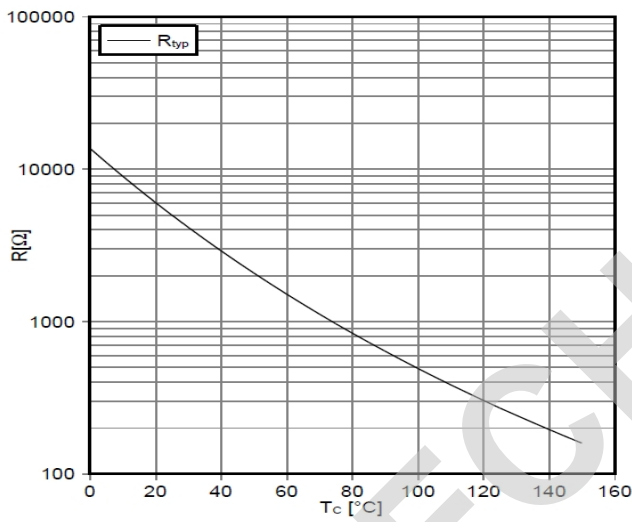
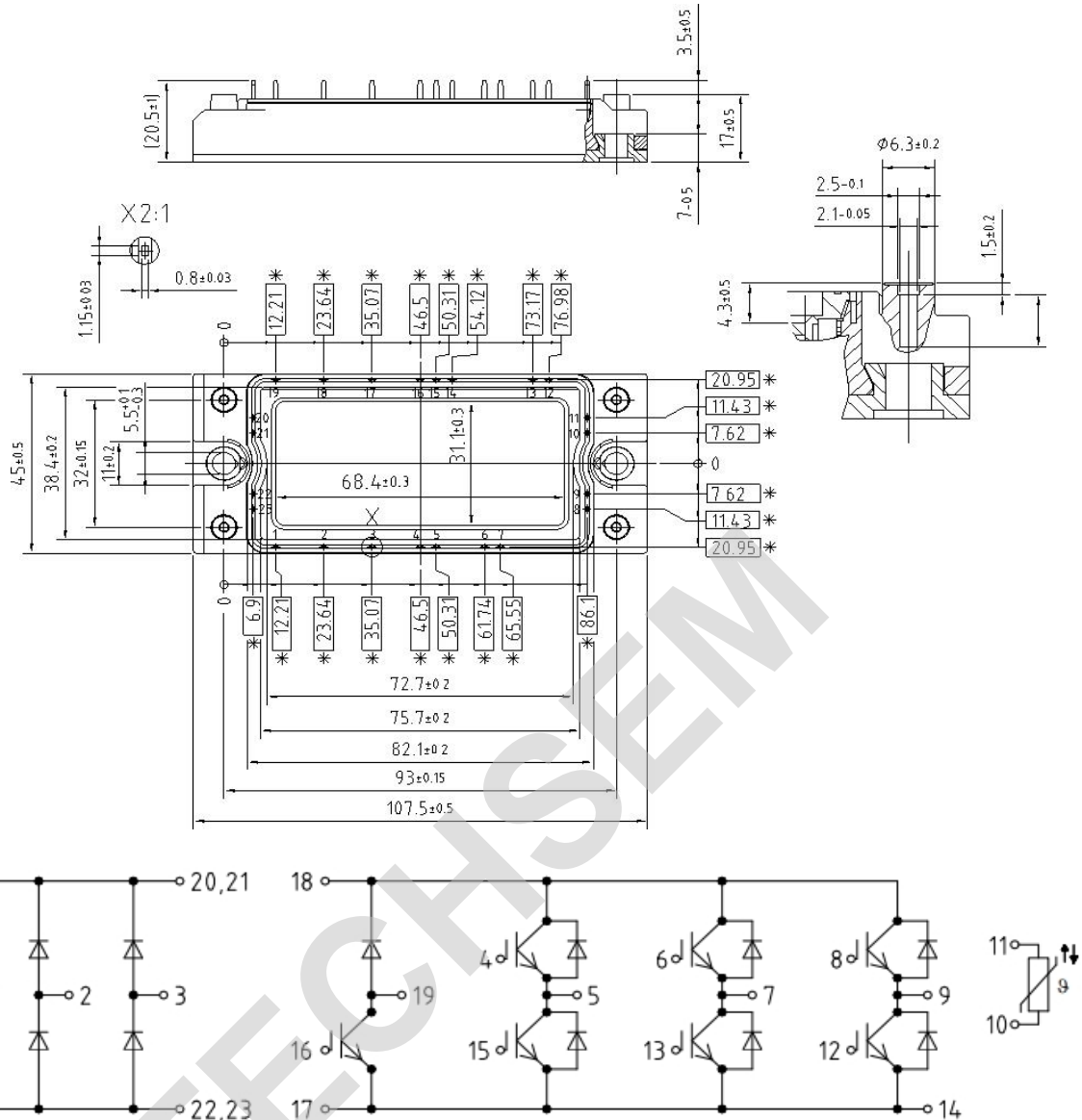


Fig.15 NTC-Thermistor-temperature characteristic

Outline:



Unmarked dimensional tolerance: ± 0.5 mm

TECHSEM reserves the right to change specifications without notice.