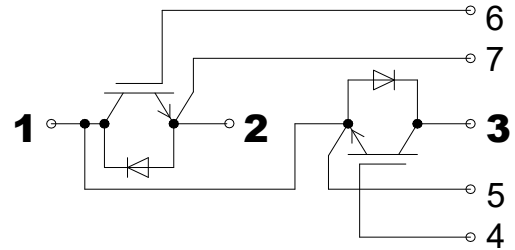


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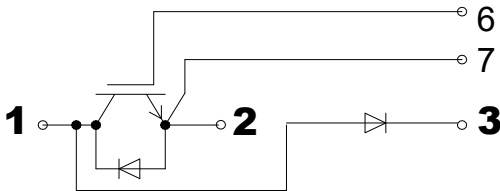
Ultra Fast IGBT Modules



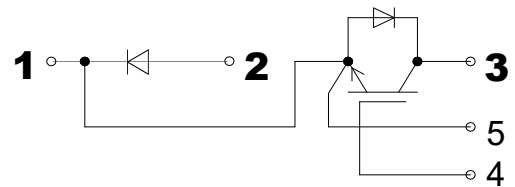
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SGD100N125UC1



SDG100N125UC1



Symbol	Test Condition	Value	Unit
IGBT			
V_{CES}		1200	V
I_C	$T_C = 25(100)^\circ\text{C}$ per chip	100(75)	A
V_{GES}		± 20	V
T_{vj} (T_{stg})		$-40 \sim +150(125)$	$^\circ\text{C}$
P_{tot}		450	W
INVERSE DIODE			
I_F	$T_C = 25(100)^\circ\text{C}$ per chip	100(75)	A
I_{FM}		200	A
V_{RRM}		1200	V
i^2t	$T_j = 125^\circ\text{C}$, $t = 10\text{ms}$, $V_R = 0\text{V}$	2000	A^2s



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Ultra Fast IGBT Modules

Symbol	Test Conditions	Min	Typ	Max	Unit
IGBT Tc = 25°C unless otherwise specified					
VGE(th)	VGE=VCE, IC=2mA	4.5	5.5	6.5	V
ICES	VGE=0;VCE=VCES;Tj=25(125)°C		0.15	0.5	mA
VCE(TO)	Tj=25(125)°C		1.4(1.6)	1.6(1.8)	V
rCE	VGE=15V		11(15)	14(19)	mΩ
VCE(sat)	IC=75A; VGE=15V; chip level		3.3	3.7	V
Cies	VGE=0V, VCE=25V, f=1MHz		6.0		nF
Coes			0.80		
Cres			0.40		
LCE				30	nH
RCC'+EE'	Terminal to Case, Tc=25°C		0.35		mΩ
td(on)	Vcc = 600V, IC = 75A RGON = RGOFF = 10Ω Tj=125°C VGE=±15V		79		ns
tr			40		ns
td(off)			350		ns
tf			20		ns
Eon/Eoff			8.50/3.30		mJ
INVERSE DIODE Tc = 25°C unless otherwise specified					
VF	IF =75A; VGE=0V; Tj = 25°C		1.9	2.5	V
Qrr	IF=75A; VR=300V; Tj=25°C di/dt = 600A/us, VGE=-15V		2.5		μC
IRRM			25		A
Erec			2.30		mJ
THERMAL CHARACTERISTICS					
Rth(j-c)	per IGBT			0.18	K/W
Rth(j-c)D	per FRD			0.49	K/W
Mechanical Data					
Ms		2.5		4	Nm
Weight			158		g

Features

- NPT Technology IGBT
- Fast Recovery Free Wheeling Diode
- Low Switching Losses
- Vce(sat) with positive temperature coefficient
- Fast Switching and short tail current
- Switched mode power supplies at f_{sw}>25KHz
- Resonant inverters up to 100KHz
- Electronic Welders at f_{sw}>25KHz

Application

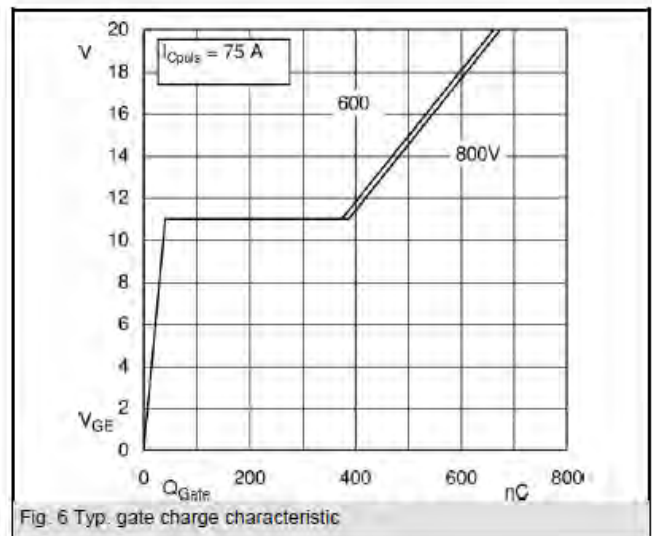
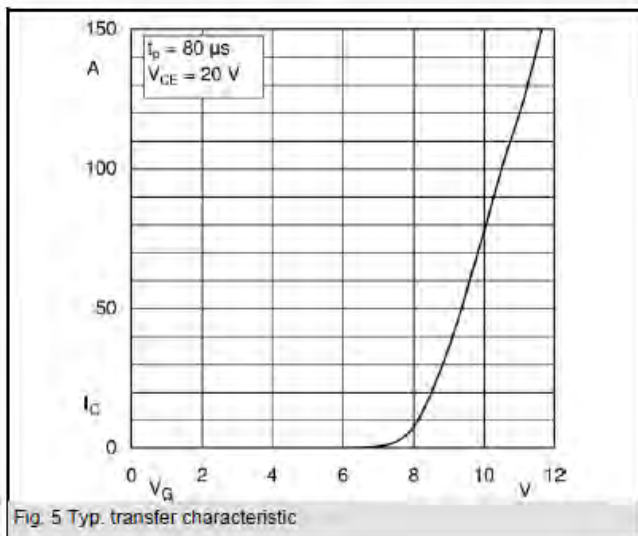
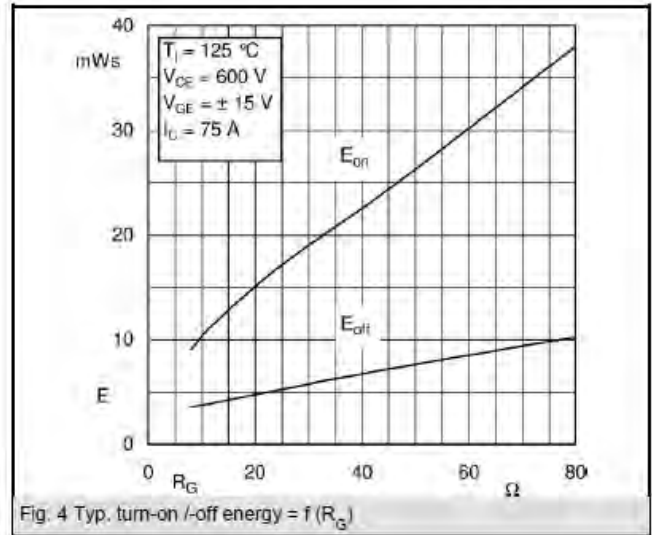
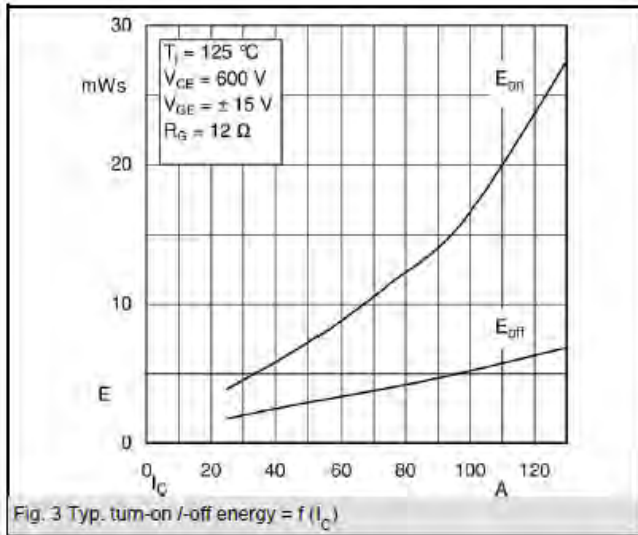
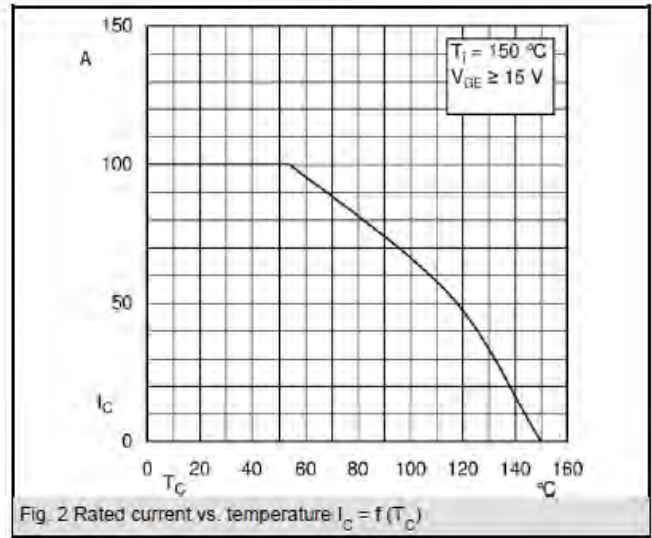
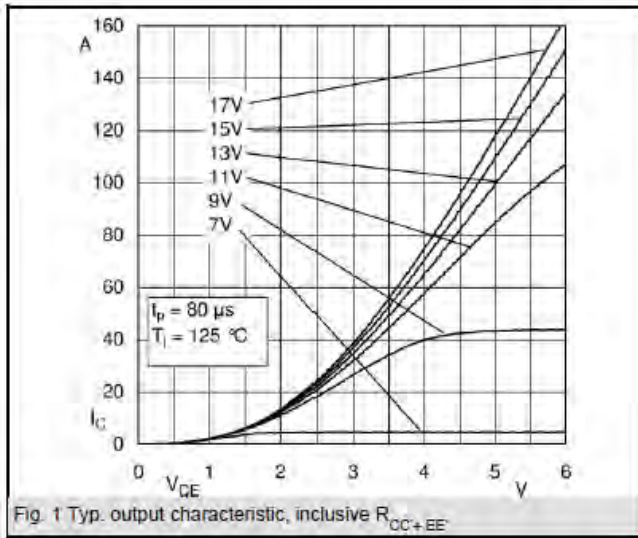
- Welding inverters
- Inductive Heating

Advantages

- Space and weight savings
- Reduced protection circuits

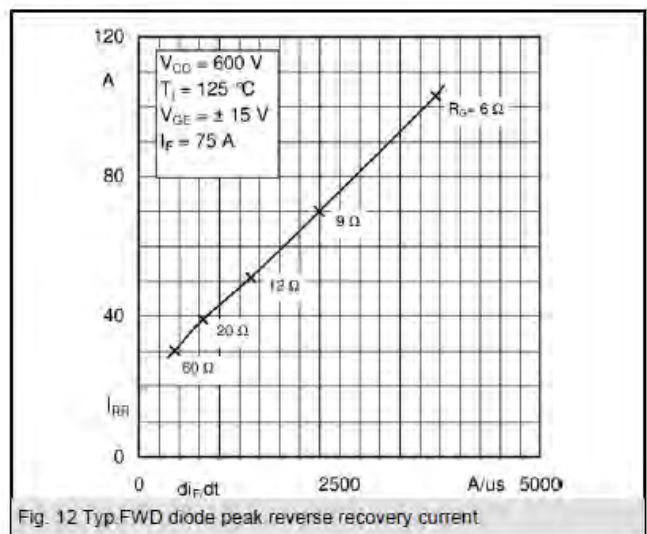
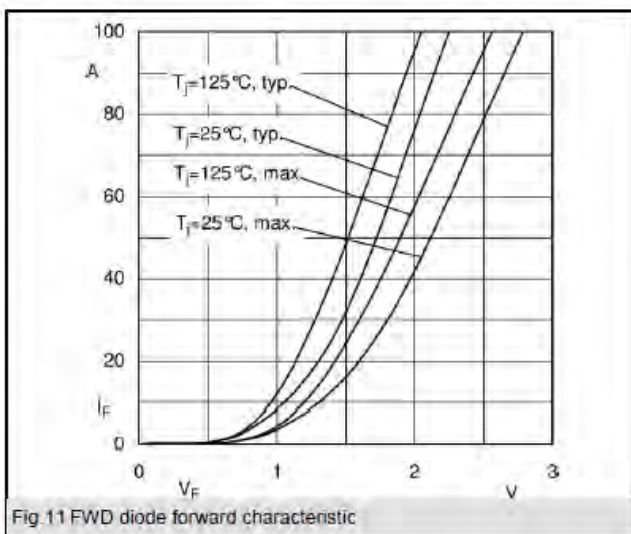
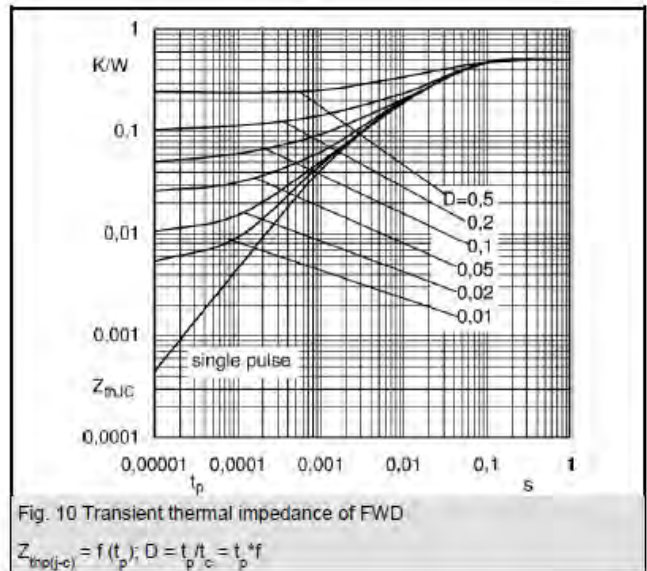
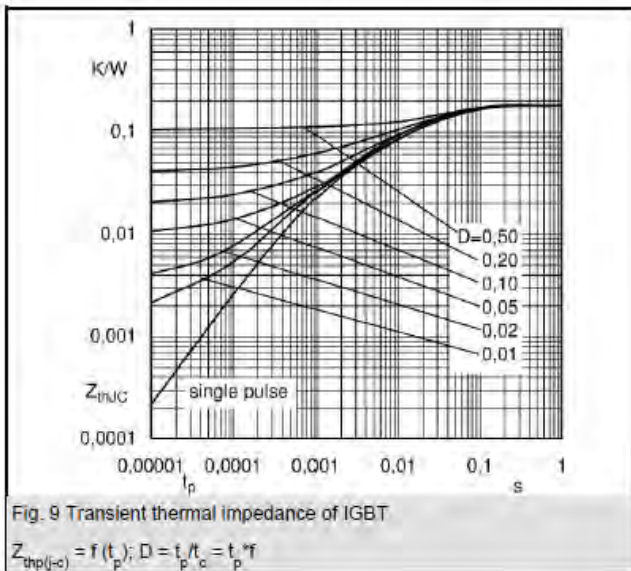
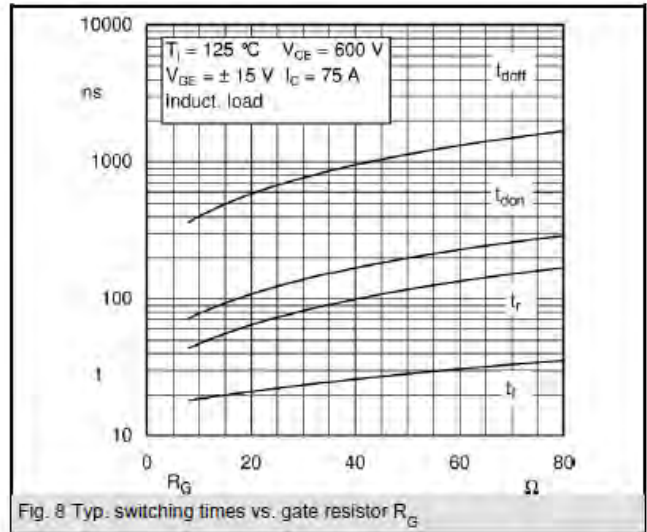
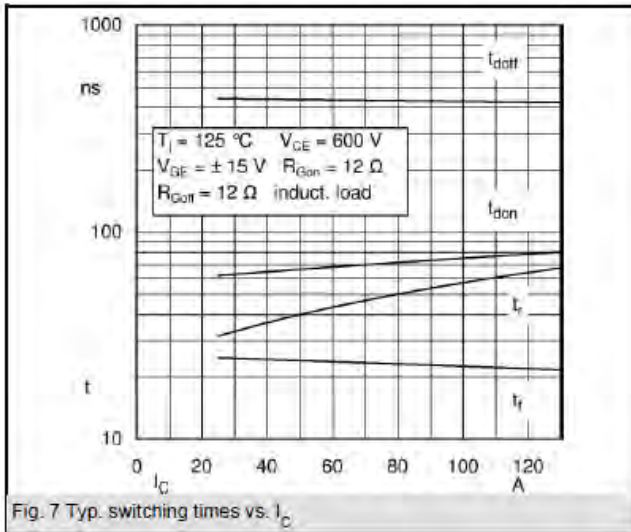
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