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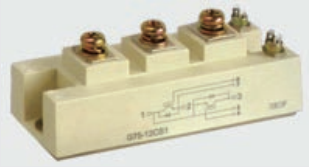
Typical applications

- AC and DC electric motor control;
- Frequency transformer;
- UPS;
- Industry power supply;
- Electric welding machine.

Characteristic

- SPT chip (soft-punch-through)
- MOS input control
- Ultra thin IGBT chip, great current low loss, low tail current
- Low VCE (sat) saturated voltage, positive temperature coefficient at high temperature
- High switch frequency, low switch loss
- High SC resistive ability
- Module creepage long distance design
- DBC insulated voltage above 2500VRMS



G75-12CS1 Technical Details

Maximum rated values

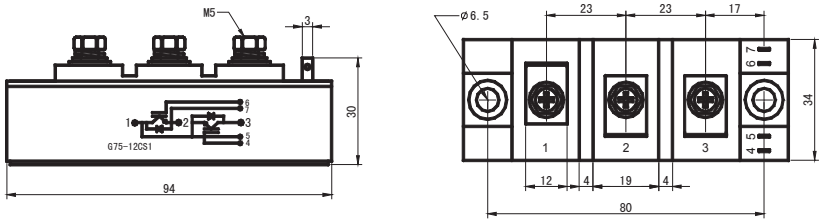
Absolute Max. Ratings			Tc=25°C unless specified	
Name	Symbol	Conditions	values	Unit
IGBT				
Collector-emitter voltage	VCES		1200	V
DC-collector current	IC	Tc=25(80)℃	100(75)	A
repetitive peak voltage	ICRM	Tc=25(80)℃, tp=1ms	200(150)	A
gate-emitter peak voltage	VGES		±20	V
operation temperature	Tvj		-40~+125	℃
storage temperature	Tstg		-40~+150	℃
insulation test voltage	VISOL	RMS, 1min, 50Hz	2500	V
Inverse diode				
DC-forward current	IF	Tc=25(80)℃	100 (75)	A
repetitive peak forward voltage	IFRM	Tc=25(80)℃, tp=1ms	200 (150)	A
forward surge current	IFSM	tp=10ms, sin, Tj=125℃	700	A

Characteristic values

Absolute Max. Ratings			Tc=25°C unless specified			
Paramiter	Symbol	Conditions	values			IGBT
			min.	typ.	max.	
IGBT						
gate threshold voltage	VGE(th)	VGE=VCE, Ic=2mA,Tj=25℃	5		7	V
collector-emitter cut-off current	ICES	VGe=0V, Vce=VCES		0.1	0.3	mA
gate-leakage current	IGES	VGE=0V, VGE=±20V, Tj=25℃	-200		200	nA
collector-emitter threshold voltage	VCE (TO)	Tj=25 (125)℃		1(0.9)	1.15(1.05)	V
collector-emitter slope resistance	rCE	VGE=15V, Tj=25 (125)℃	13(16)		16(20)	mΩ
collector-emitter saturation votage	VCE(SAT)	Ic=75 A, VGE=15V, chip level	1.9 (2.1)		2.35 (2.55)	V
input capacitance	Cies	VGE=0, VCE=25V, f=1MHZ		6.2		nF
output capacitance	Coes			0.74		nF
Reverse transfer capacitance	Cres			0.71		nF
stray inductance module	LCE				25	nH
module lead resistance	RCC'+EE'	terminals-chip, Tc=25 (125)℃	0.75 (1)			mΩ
Short circuit current	Isc	tpsc≤10s, VGE=15V, TVj=125℃, VCC=900V, VCEM≤1200V	420			A
turen on delay time	td (on)	Vcc=600V, Ic=75A Rgon=Rgoff=12Ω Tj=125℃, VGE=±15V	150			ns
rise time	tr		45			ns
turn off delay time	td (off)		560			ns
fall time	tf		50			ns
turn-on energy loss per pules	Eon		8.5			mj
turn-off energy loss per pulse	Eoff		7.5			mj
Inverse diode						
forward voltage	VF	IF=75A, VGE=0V; Tj=25(125)℃		2(1.8)	2.5(1.9)	V
threshold voltage of diode	V(TO)	Tj=25(125)°C		1.1	1.2	V
peak reverse recovery current	IRRM	IF=75A, VGE=0, diF/dt=600A/us, Tj=125, VR=600V	62			A
Reverse recovered time	trr		200			nS
Thermal properties						
Thermal resistance, junction to case	Rth(j-c)	per IGBT	0.2			K/W
	Rth(j-c)D	per inverse diode	0.5			K/W
Thermal resistance, case to heat sink	Rth(c-s)	per module	0.05			K/W
Mechanical properties						
mounting torque	M1	M6	3		5	NM
terminal connection tord	M2	M5	2.5		5	NM
weight	MAX	176				g
Case color		white				
Dimensions	MAX	94x34x30.5				mm

G75-12CS1 Technical Details

Dimensions



Graphs

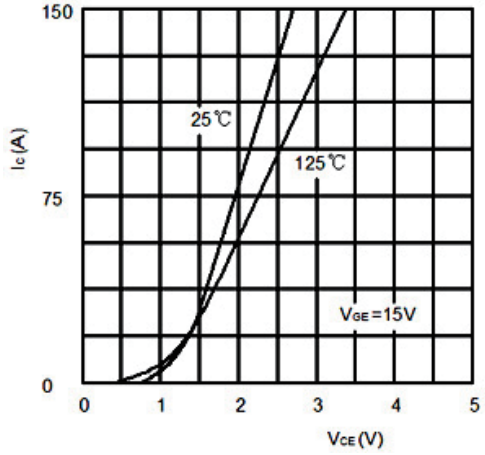


Fig. 1 Typ. output characteristic