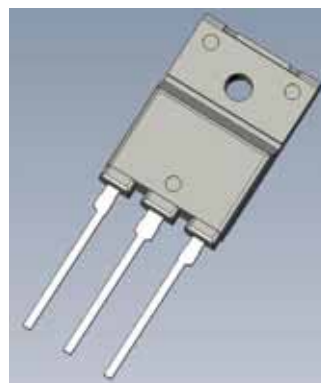


Features

- Low Saturation Voltage $V_{CE(sat)}=1.5V$ typ. ($I_C=30A$)
- High Speed SW $t_f=120ns$ typ. ($I_C=30A$)

Package

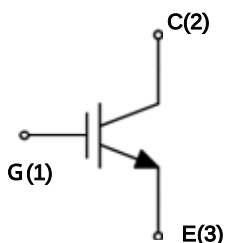
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Applications

- Current Resonance Inverter Switching

Equivalent circuit



Absolute maximum ratings

($T_a=25^{\circ}C$)

Characteristic	Symbol	Rating	Unit
Collector to Emitter Voltage	V_{CES}	600	V
Gate to Emitter Voltage	V_{GES}	± 30	V
Continuous Collector Current	I_C	30	A
Pulsed Collector Current	$I_C(\text{pulse})$ ¹⁾	100	A
Maximum Collector-emitter dv/dt	dv/dt ²⁾	5	V/ns
Maximum Power Dissipation	P_C	60 ($T_c=25^{\circ}C$)	W
Thermal Resistance IGBT	θ_{j-c}	2.08	/W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature	T_{stg}	- 55~150	$^{\circ}C$

1) P_W 100usec. , Duty cycle 1%

2) T_c 125 , See Fig.1

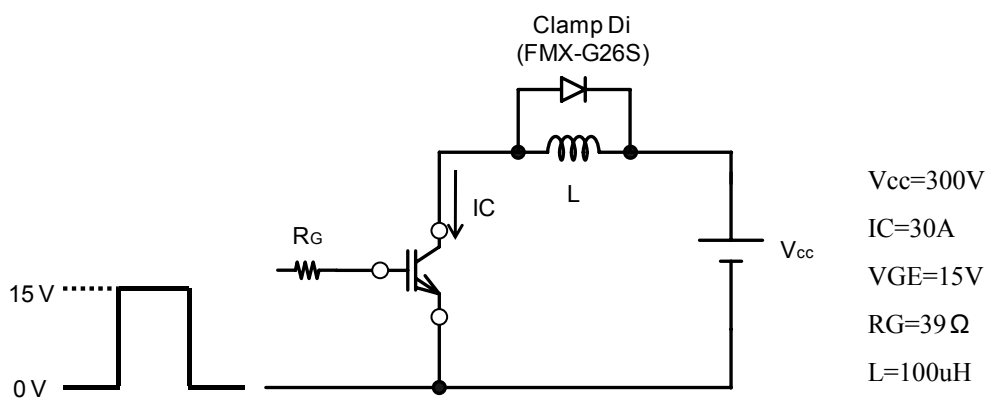
Electrical characteristics
●IGBT

(Ta=25°C)

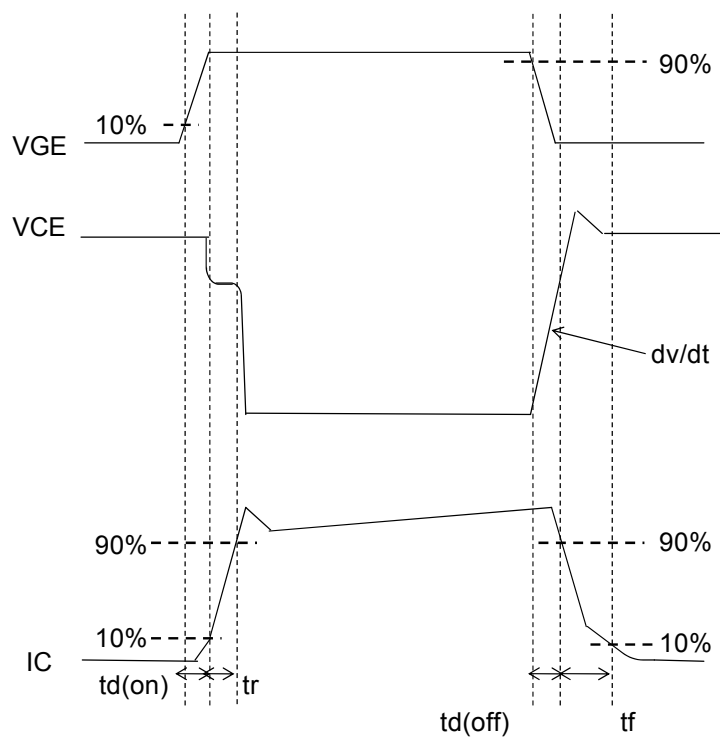
Characteristic	Symbol	Test Conditions	Limits			Unit
			MIN.	TYP.	MAX.	
Collector to Emitter Breakdown Voltage	V(BR)CES	IC=100μA, VGE=0V	600			V
Gate to Emitter Leakage Current	IGES	VGE=±30V			±500	nA
Collector to Emitter Leakage Current	ICES	VCE=600V, VGE=0V			100	μA
Gate Threshold Voltage	VGE(th)	VCE=10V, IC=1mA	3		6	V
Collector to Emitter Saturation Voltage	VCE(sat)	VGE=15V, IC=30A		1.5	1.7	V
Collector to Emitter Saturation Voltage	VCE(sat)	VGE=15V, IC=50A		1.8		V
Input Capacitance	Cies	VCE=20V VGE=0V f=1MHz		2500		pF
Output Capacitance	Coes			150		
Reverse Transfer Capacitance	Cres			80		
Gate charge	Qgate	VCE=300V IC=30A VGE=15V		65		nC
Gate to Collector Charge	Qgc			20		
Gate to Emitter Charge	Qge			20		
Turn-On Delay Time	td(on)	VCE=300V, IC=30A VGE=15V, RG=39Ω L=100uH, Tc=25 See Fig.1		100		ns
Rise Time	tr			80		
Turn-Off Delay Time	td(off)			300		
Fall Time	tf			120		
Turn-On Delay Time	td(on)	VCE=300V, IC=30A VGE=15V, RG=39Ω L=100uH, Tc=125 See Fig.1		100		ns
Rise Time	tr			100		
Turn-Off Delay Time	td(off)			300		
Fall Time	tf			200		

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Fig.1 Switching Time Test Method

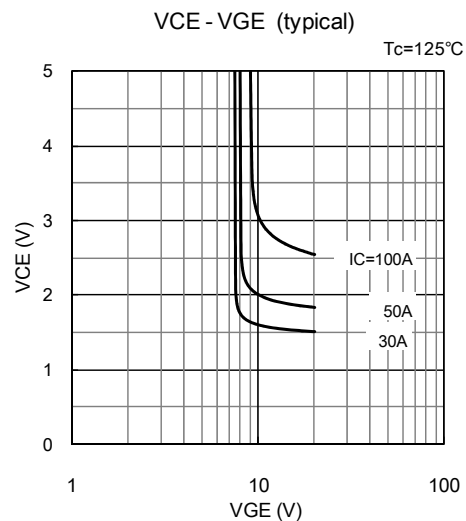
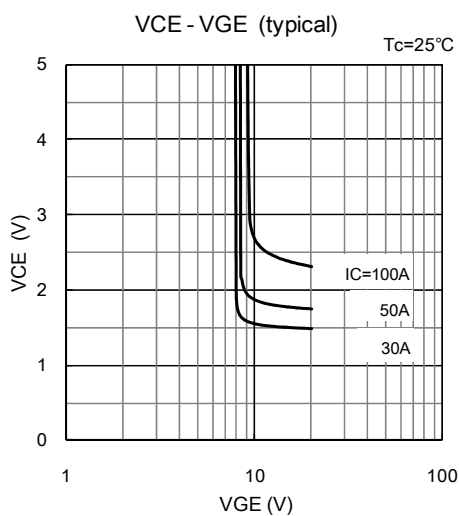
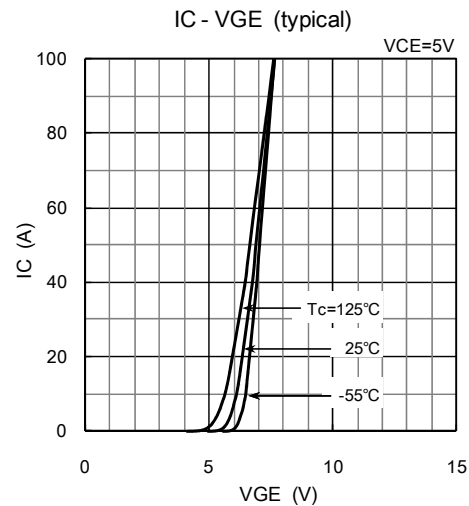
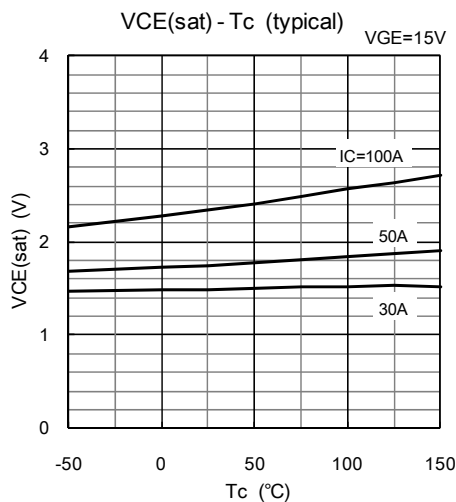
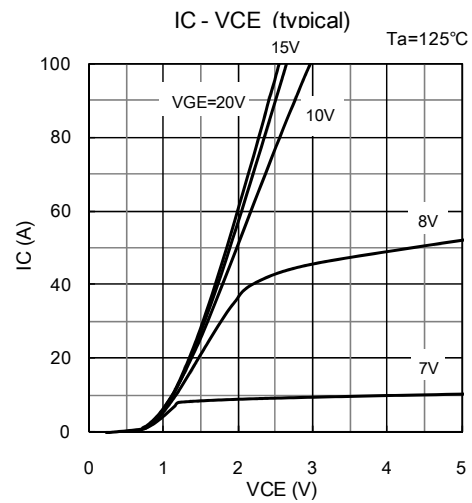
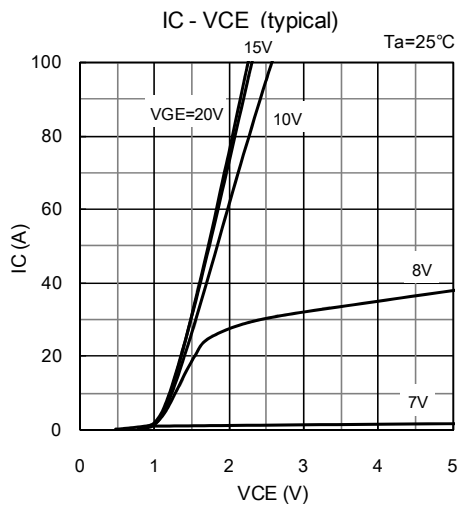


(a) Test Circuit



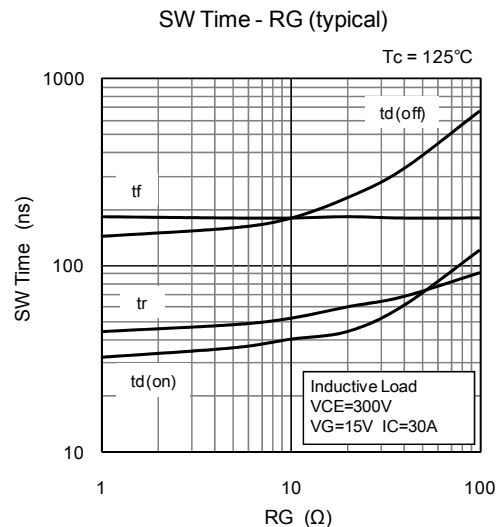
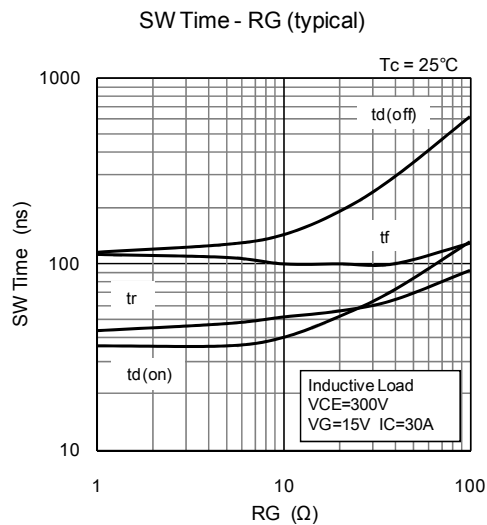
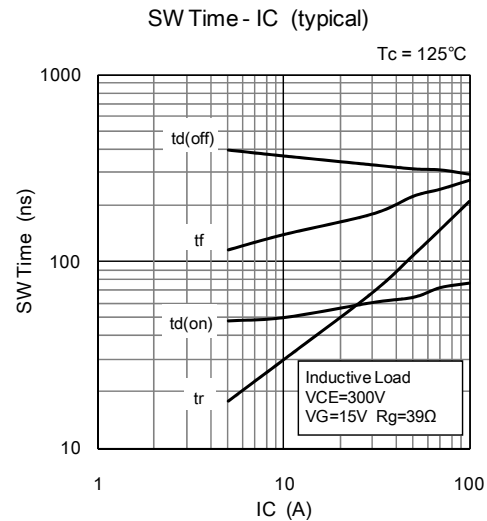
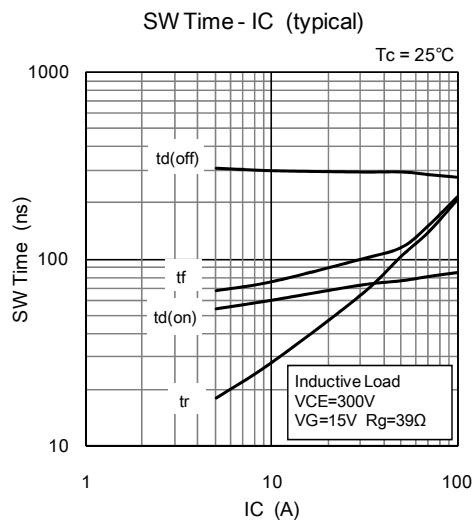
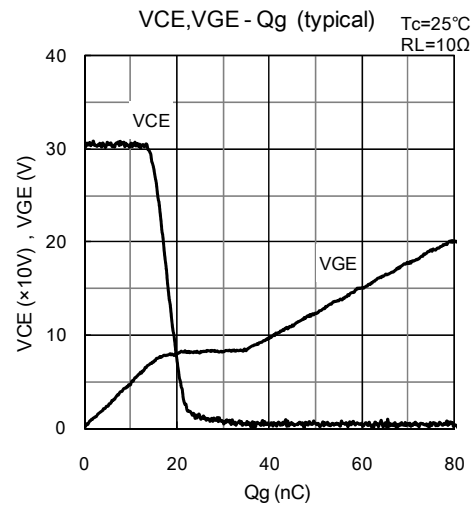
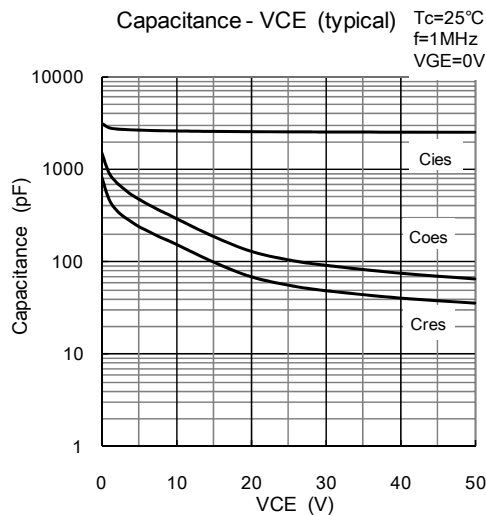
(b) Waveforms

Characteristic Curves



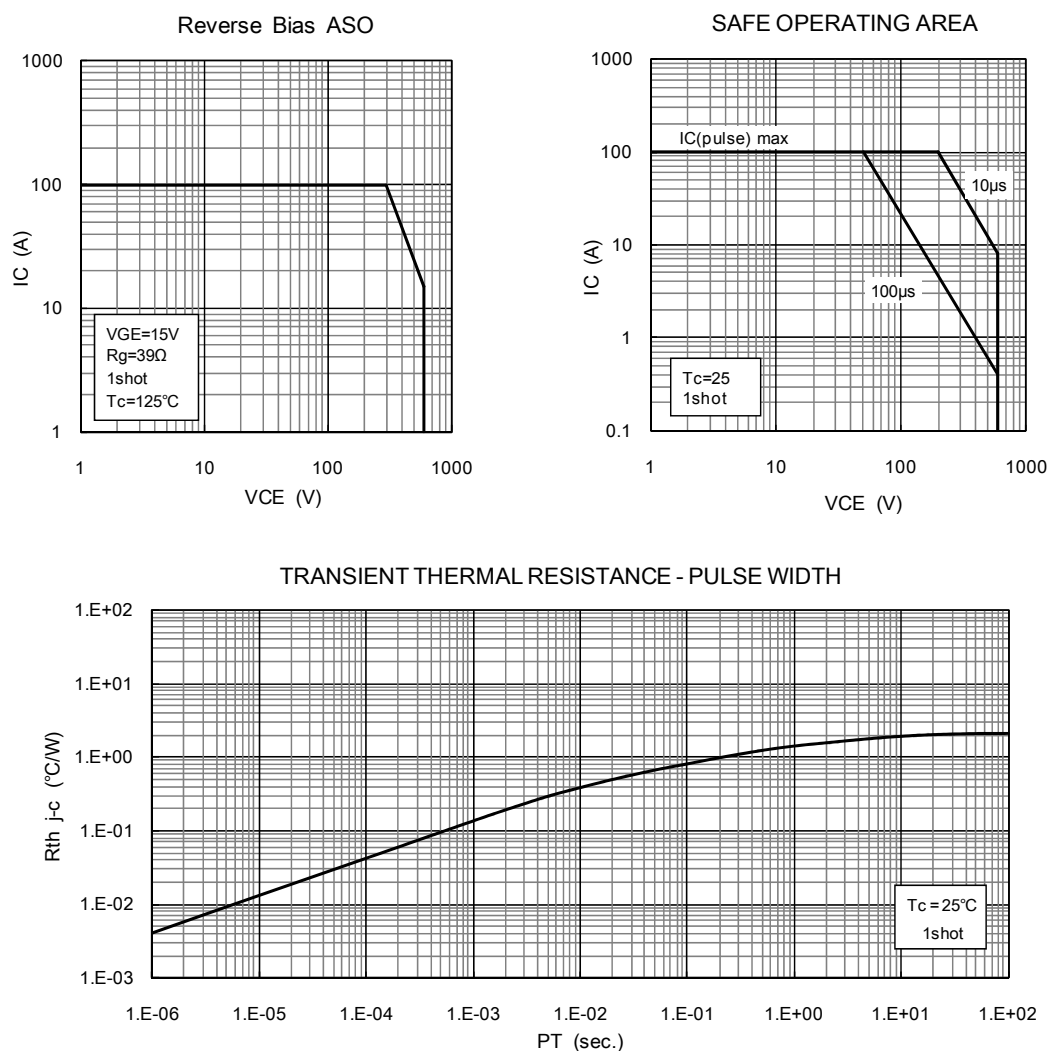
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Characteristic Curves



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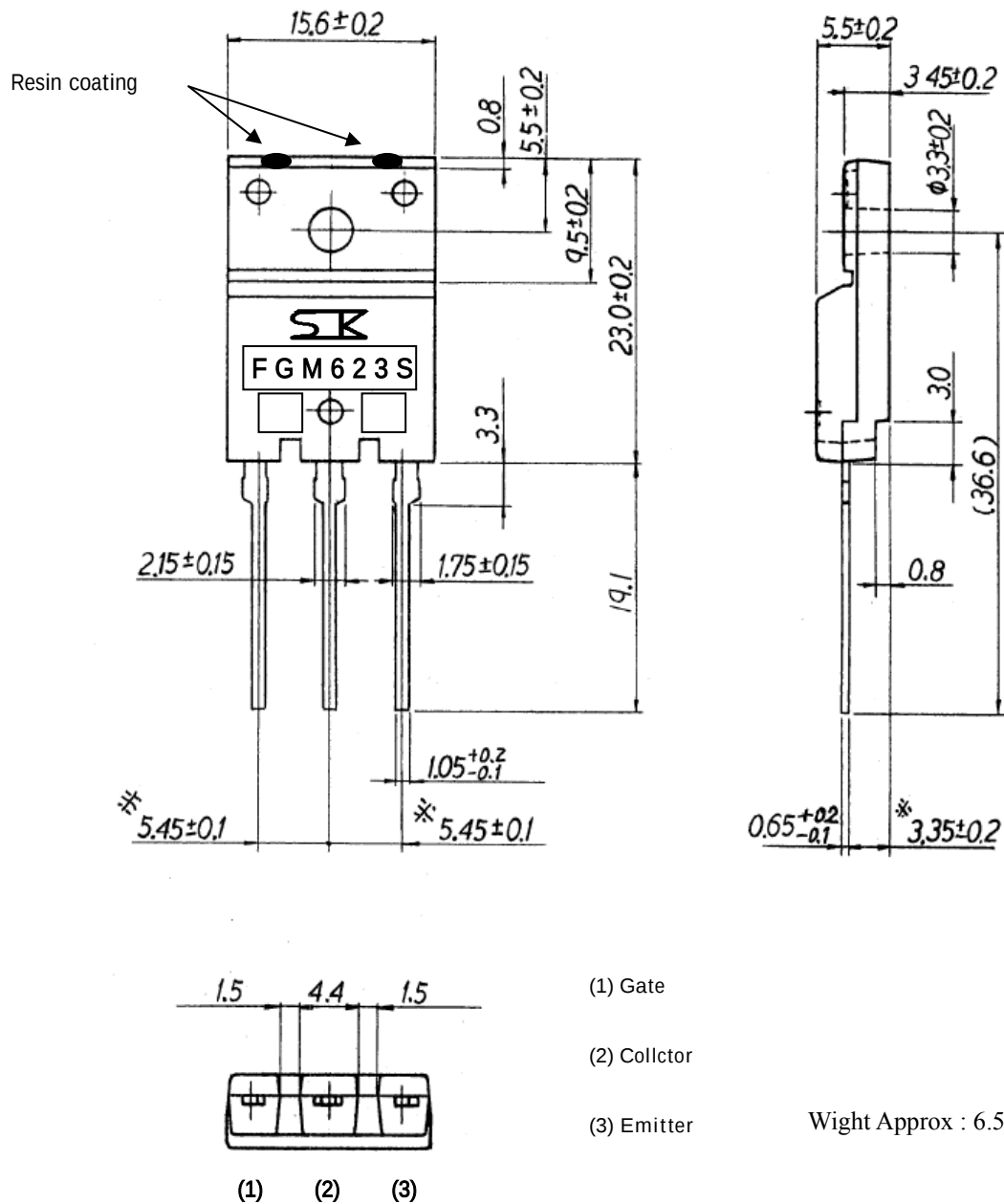
Characteristic Curves



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Outline

TO-3PF



Wight Approx : 6.5g

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