

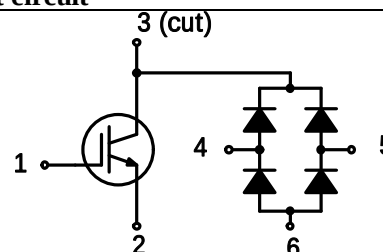
Features

- Built-in IGBT and diode bridge of partial switching PFC circuit Enable to reduce mounting area
 - Low saturation voltage IGBT $V_{CE(sat)} = 1.7V$ max
 - Low saturation voltage diode bridge $V_F = 1.1V$ max
 - The clip lead is adopted for inner lead.
- Low inductance, low resistance, high current capability
The smoke generation and explosion are less likely to occur in case of destruction.

Package

S L A

Equivalent circuit



Applications

- Partial switching PFC

Absolute maximum ratings

(Ta=25℃)

Characteristic	Symbol	Ratings	Unit
Collector to Emitter Voltage	V _{CE}	600	V
Gate to Emitter Voltage	V _{GE}	±30	V
Continuous Collector Current	I _{C(DC)}	30	A
Pulsed Collector Current	I _C (pulse) ¹	100	A
Diode Peak Reverse Voltage	V _{RM}	600	V
Diode Forward Current	I _F	25	A
Diode Peak Surge Forward Current	I _{FSM} ²	200	A
Diode I ² t Limiting Value	I ² t ³	200	A ² s
Maximum Allowable Power Dissipation	P _T ⁴	5 (No.Fin Ta=25℃)	W
		92 (Tc=25℃)	
Thermal Resistance	θj-a ⁴	25 (Junction-to-Ambient)	℃ /W
	θj-c ⁴	1.36 (Junction-to-Case)	℃ /W
	θj-c IGBT	3.91 (Junction-to-Case,IGBT 1 Element Operation)	℃ /W
	θj-c Di	8.33 (Junction-to-Case,Di 1 Element Operation)	℃ /W
Isolation Voltage	V _{ISO}	1500 (Between Fin and Lead Pin, 1minute AC)	Vrms
Operating Junction Temperature	T _j	150	℃
Storage Temperature	T _{stg}	-40 ~ 150	℃

1. PW 10μs, Duty 1%

2. PW 10ms, Half sinewave, 1shot

3. 1ms PW 10ms

4. All Element Operation

Electrical characteristics

• IGBT

(Ta=25°C)

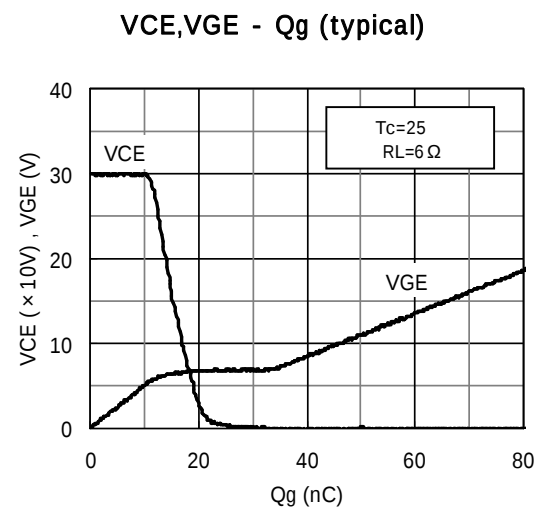
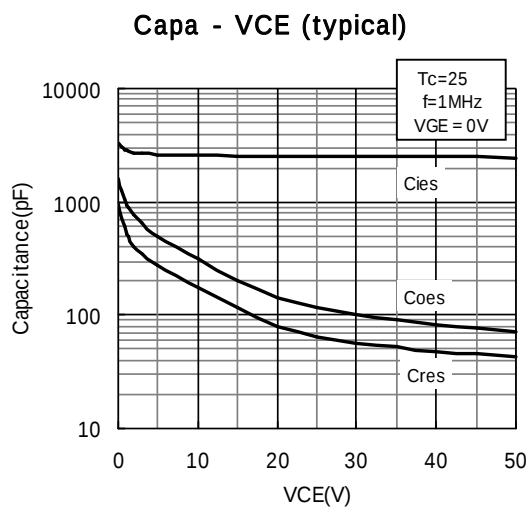
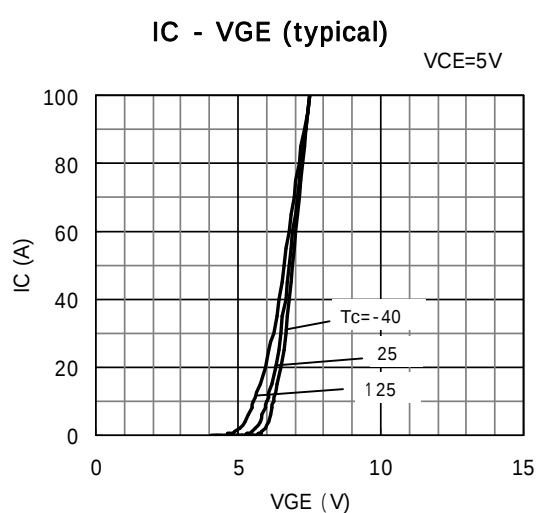
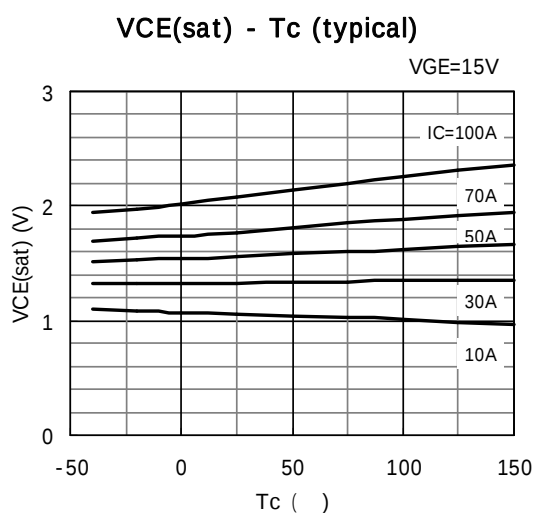
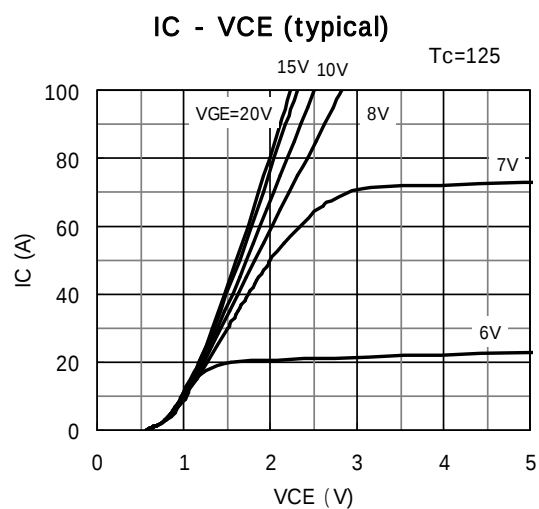
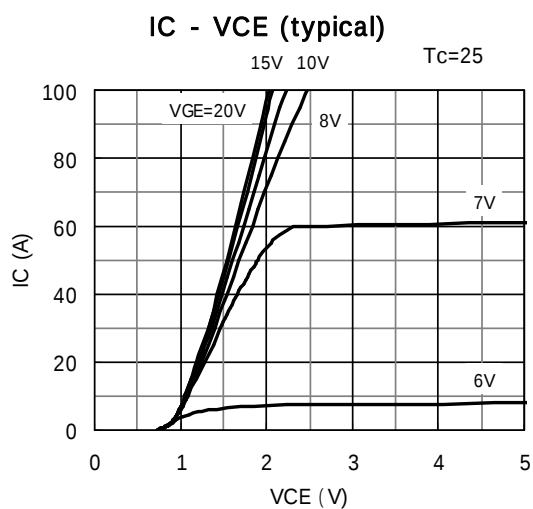
Characteristic	Symbol	Test Conditions	Limits			unit
			min	typ	max	
Collector to Emitter Breakdown Voltage	V(BR)CES	IC= 100μA, VGE=0V	600			V
Gate to Emitter Leakage Current	IGES	VGE= ±30V			±500	nA
Collector to Emitter Leakage Current	ICES	VCE= 600V, VGE=0V			100	μA
Gate Threshold Voltage	VGE(th)	VCE= 10V, ID=1mA	3		6	V
Collector to Emitter Saturation Voltage	VCE(sat)	VGE=15V, IC= 30A		1.3	1.7	V
Collector to Emitter Saturation Voltage	VCE(sat)	VGE=15V, IC= 50A		1.6		V
Input Capacitance	Cies	VCE=20V f=1.0MHz VGE=0V		2500		pF
Output Capacitance	Coes			150		
Reverse Transfer Capacitance	Cres			80		
Turn-On Delay Time	td(on)	IC=50A VCE 300V RG=39Ω VGE=±15V See fig.1		80		ns
Rise Time	tr			190		
Turn-Off Delay Time	td(off)			120		
Fall Time	tf			320		

• Di

(Ta=25°C)

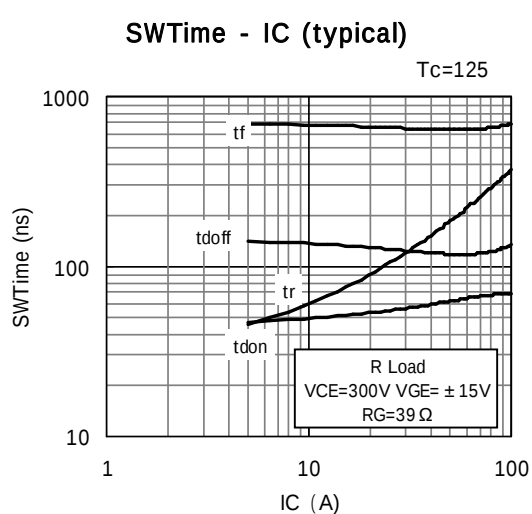
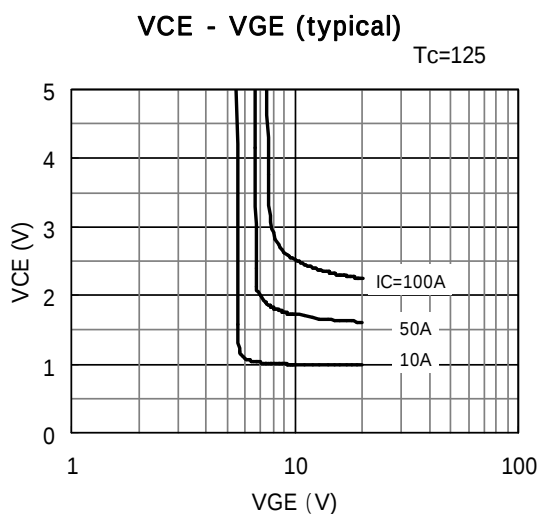
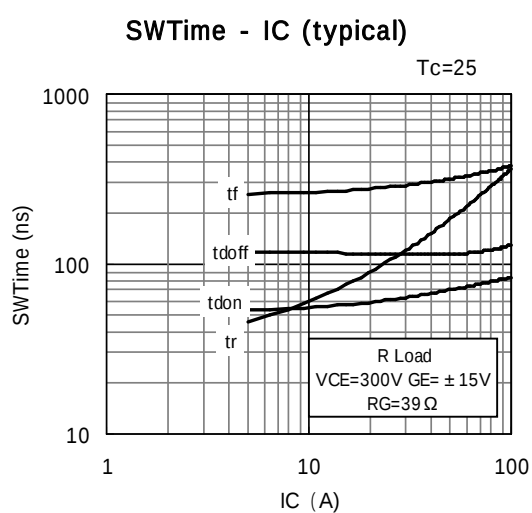
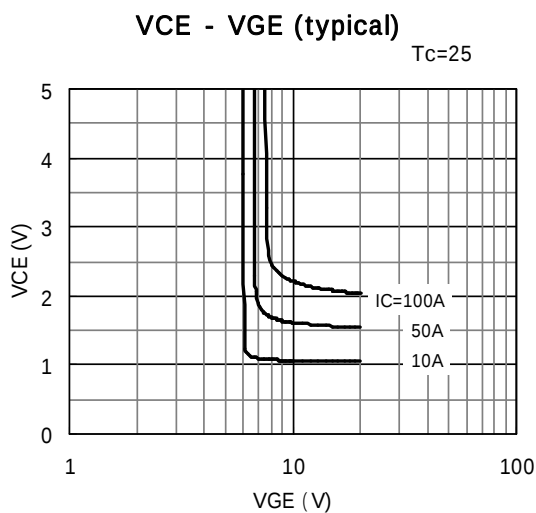
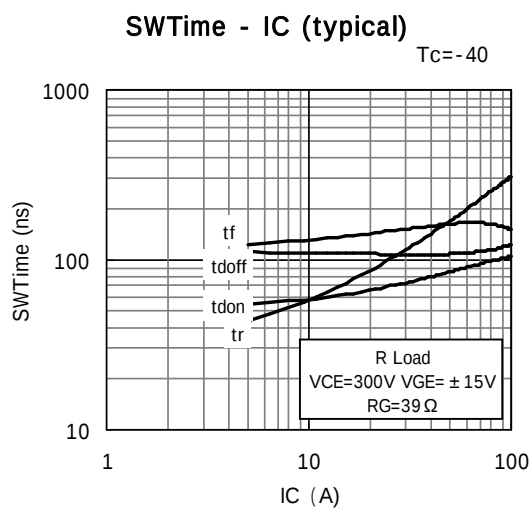
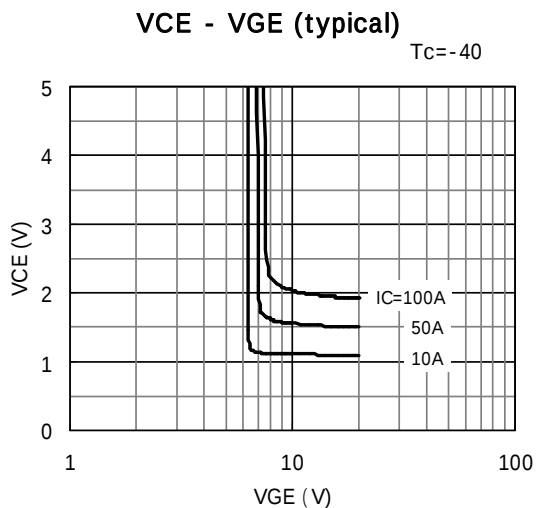
Characteristic	Symbol	Test Conditions	Limits			
			min	typ	max	
Forward Voltage Drop	VF	IF= 12.5A			1.1	
Reverse Leakage Current	IR	VR=600V			50	
Reverse Leakage Current Under High Temperature	H-IR	VR=600V, Tj=150°C			200	

Electrical characteristics



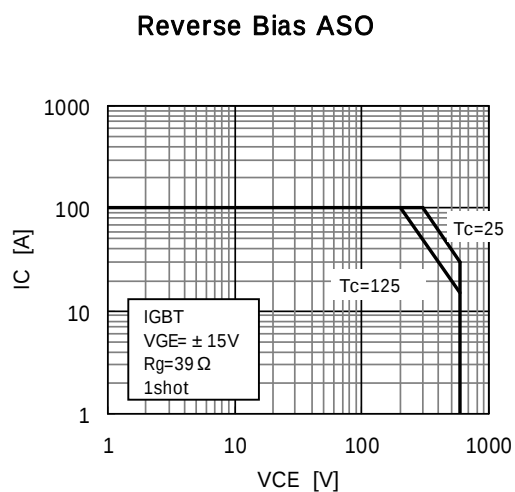
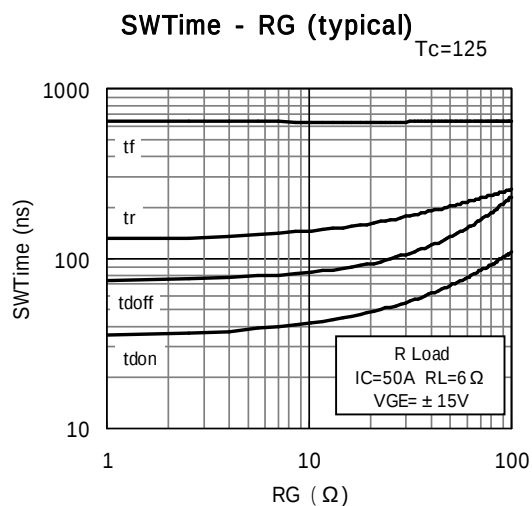
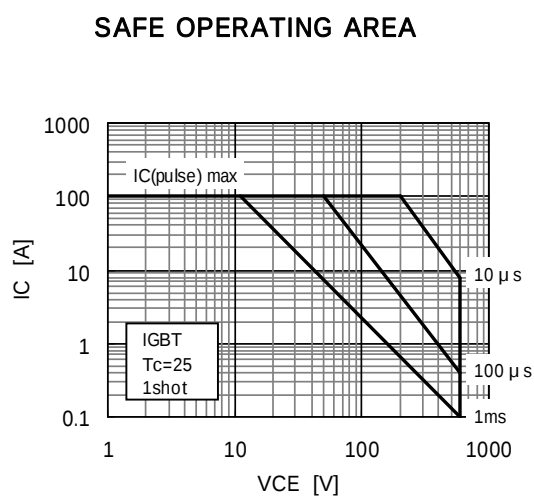
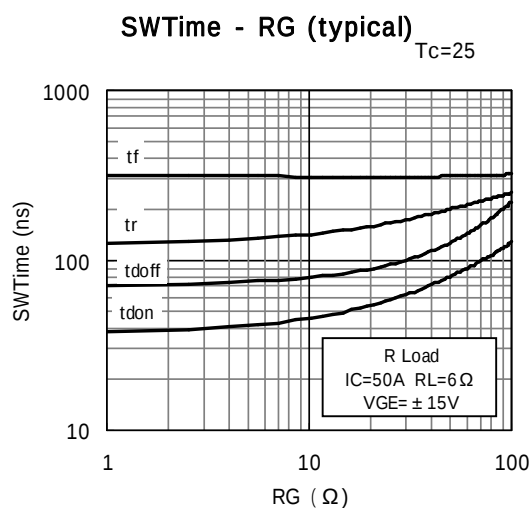
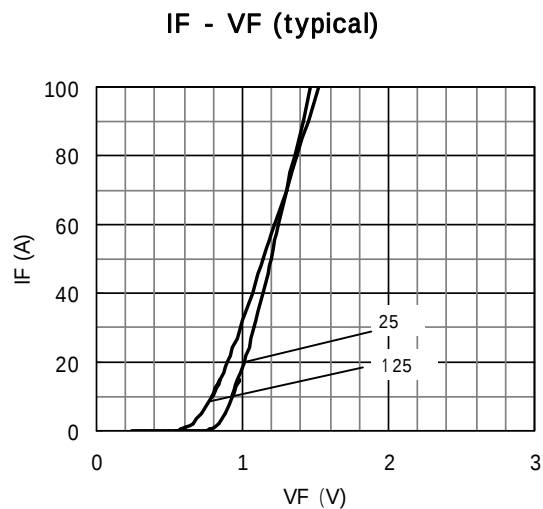
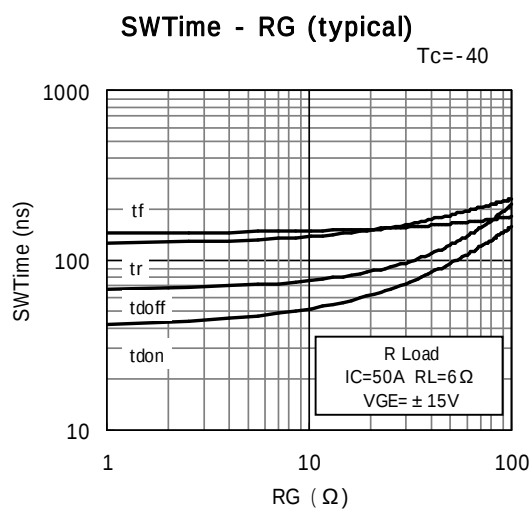
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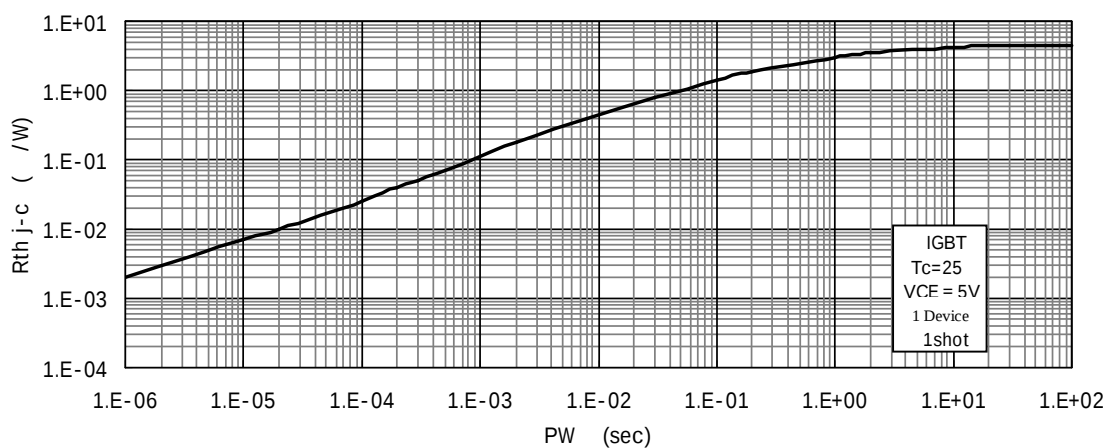
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Electrical characteristics

TRANSIENT THERMAL RESISTANCE - PULSE WIDTH IGBT



TRANSIENT THERMAL RESISTANCE - PULSE WIDTH Di

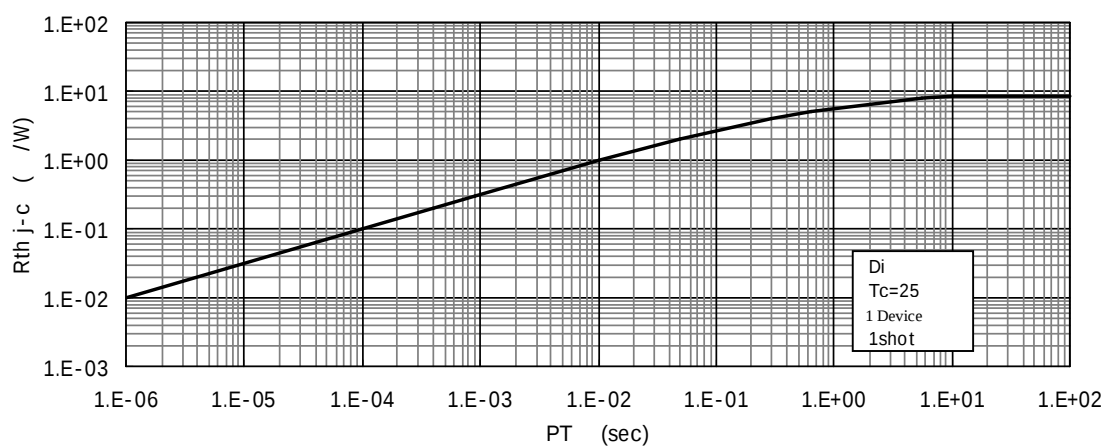
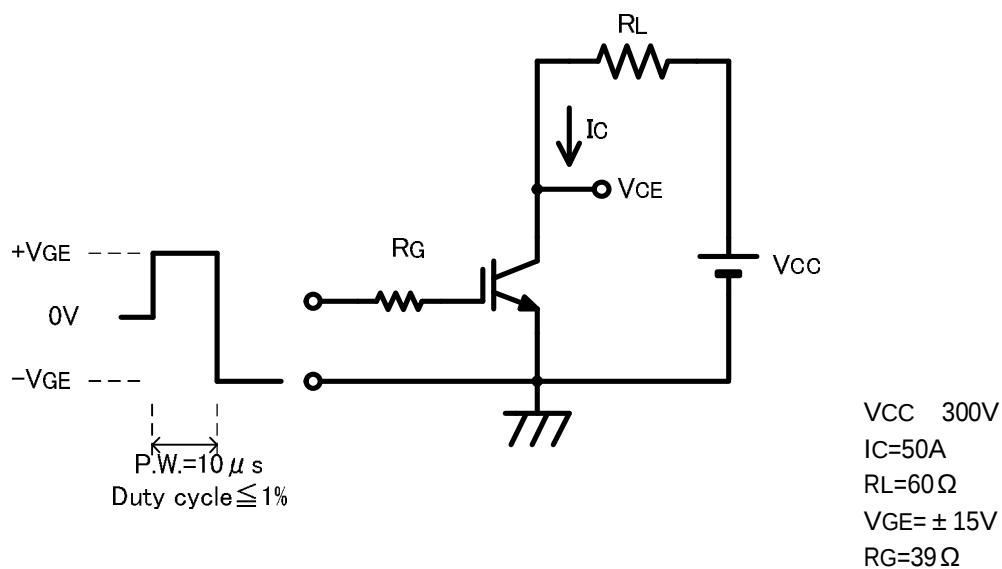
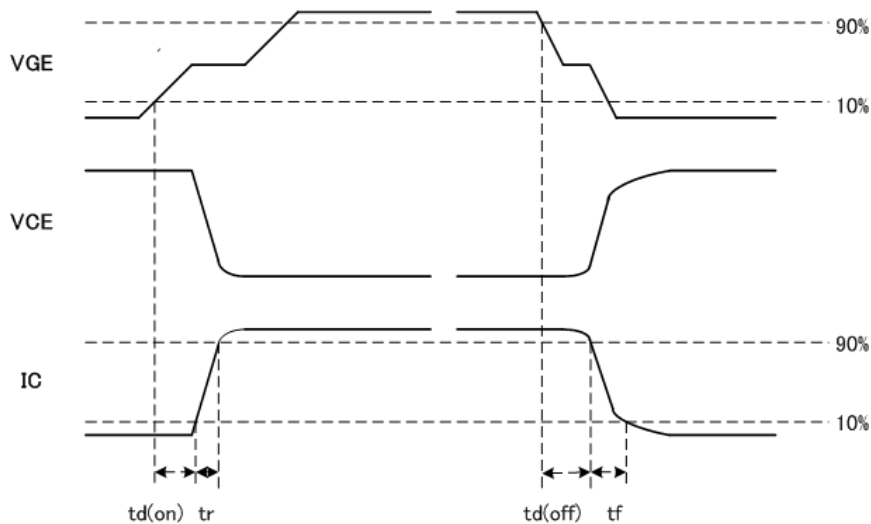


Fig.1 Switching Time Test Method



(a) Test Circuit



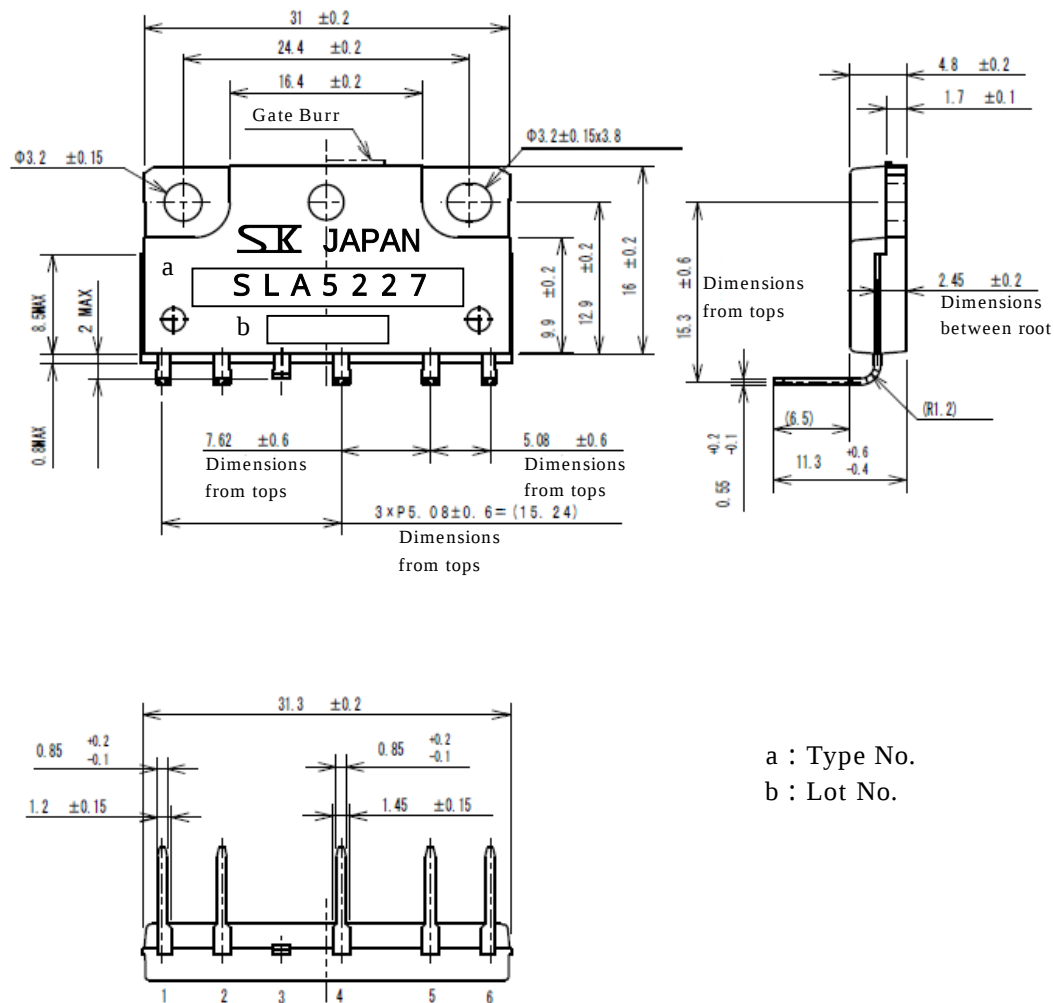
(b) Waveforms

Outline

SLA (LF No. 822)

Dimensions
between root

Dimensions
from tops



Weight Approx. 6g