

ADE-208-287 (Z)

2SH14

Silicon N-Channel IGBT

HITACHI

1st. Editon
Feb. 1995

Application

High speed power switching

Features

- High speed switching
- Low on saturation voltage

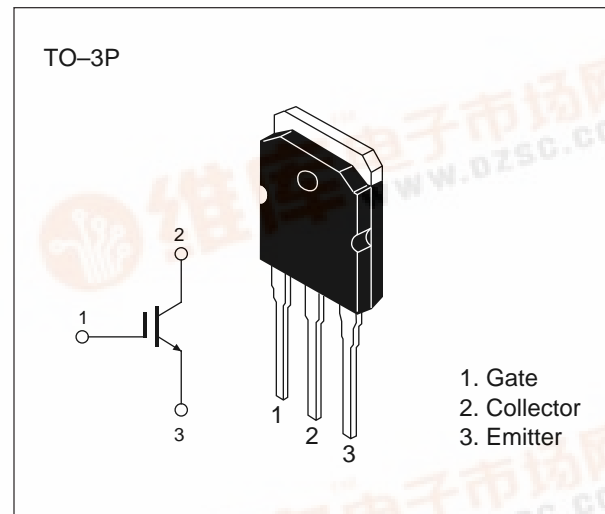


Table 1 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to emitter voltage	V_{CES}	600	V
Gate to emitter voltage	V_{GES}	± 20	V
Collector current	I_C	30	A
Collector peak current	$i_{c(peak)}$	60	A
Collector dissipation	P_C^*	100	W
Channel temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

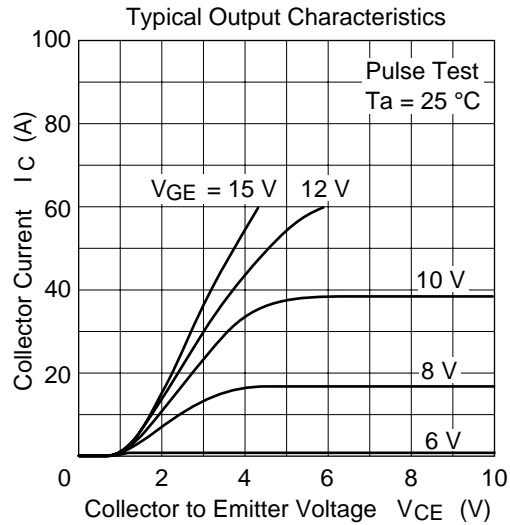
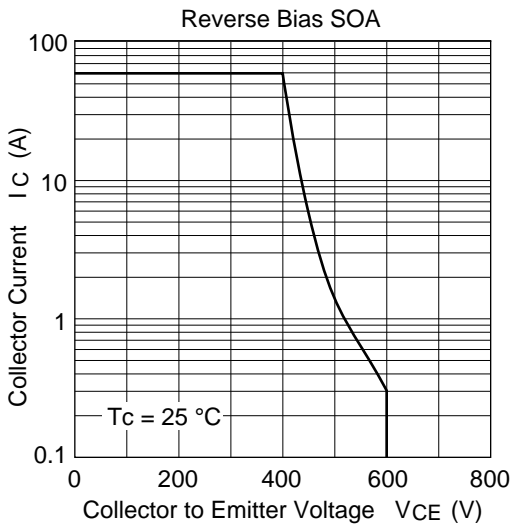
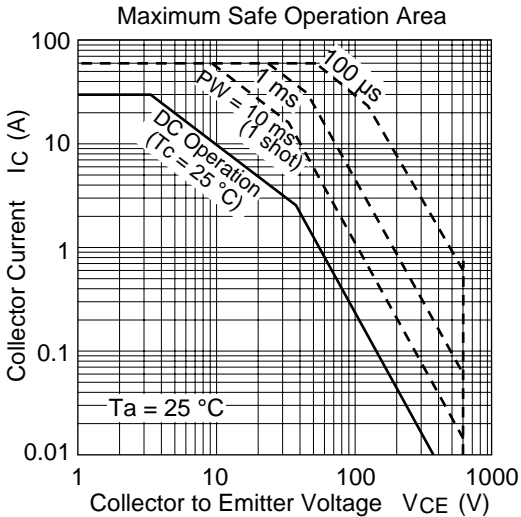
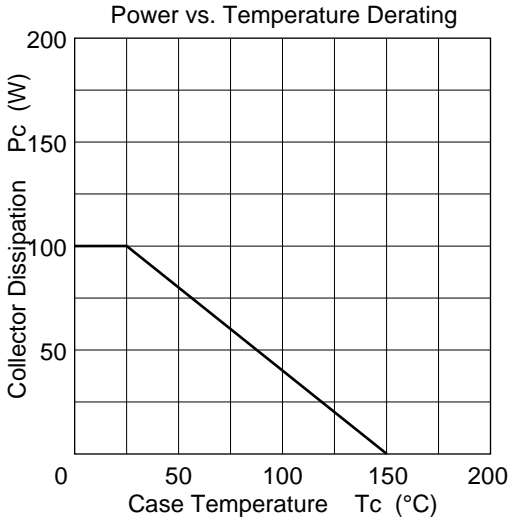
* Value at $T_c = 25^\circ\text{C}$

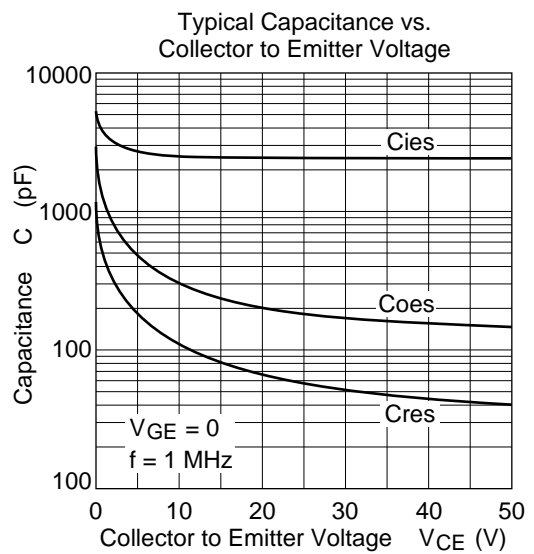
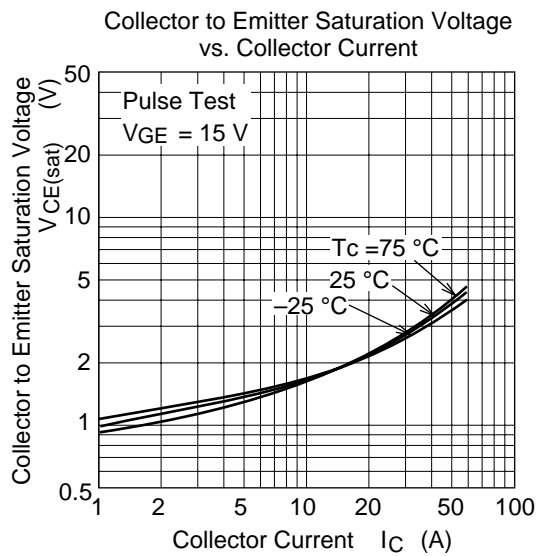
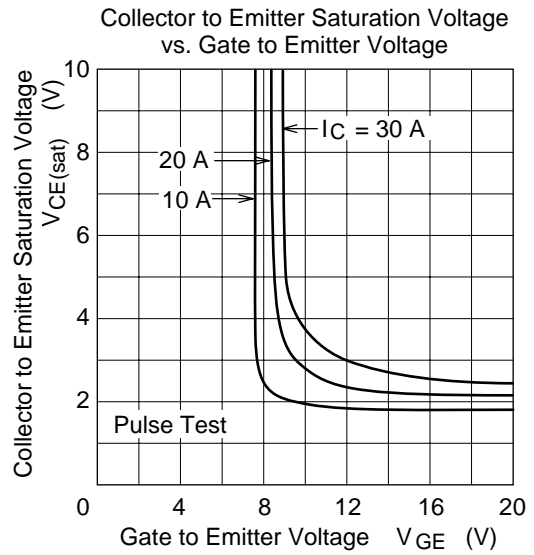
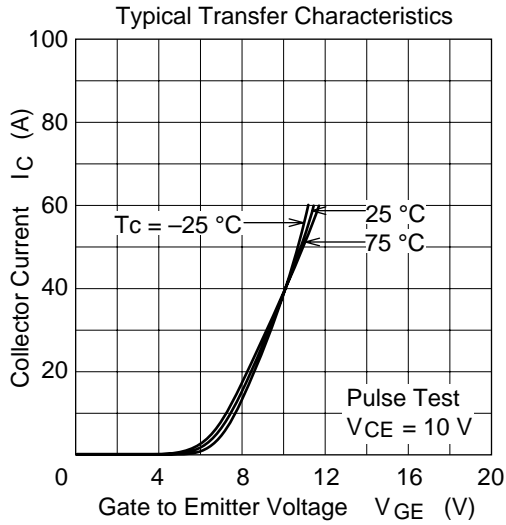
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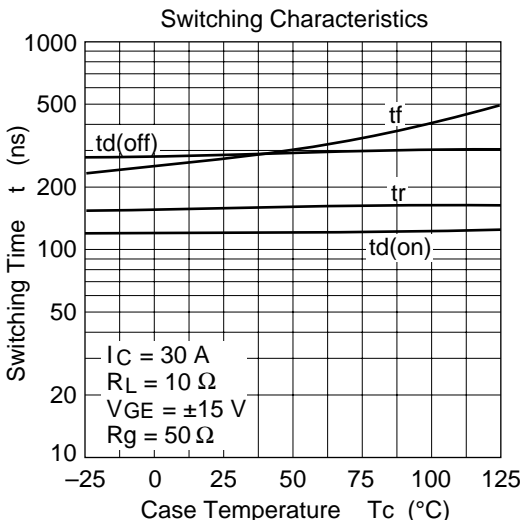
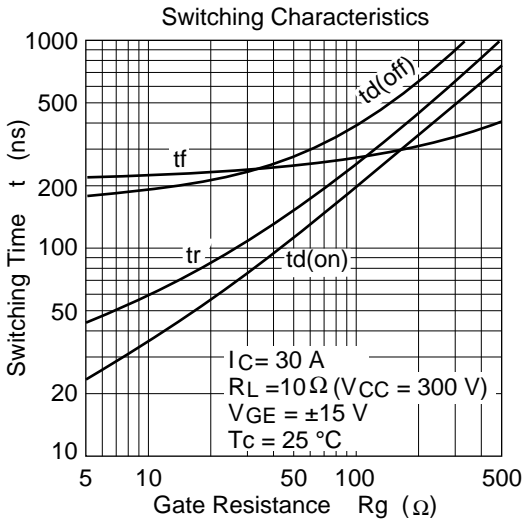
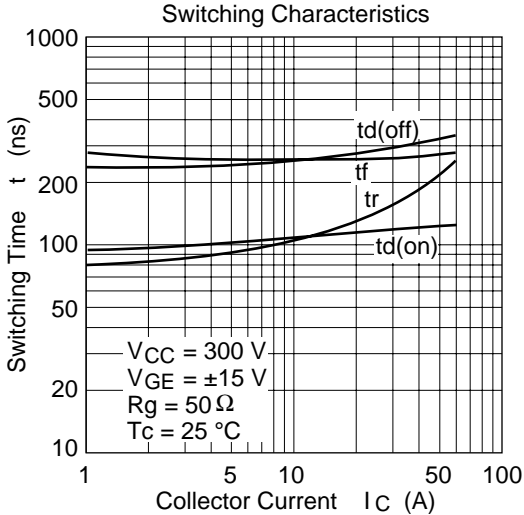
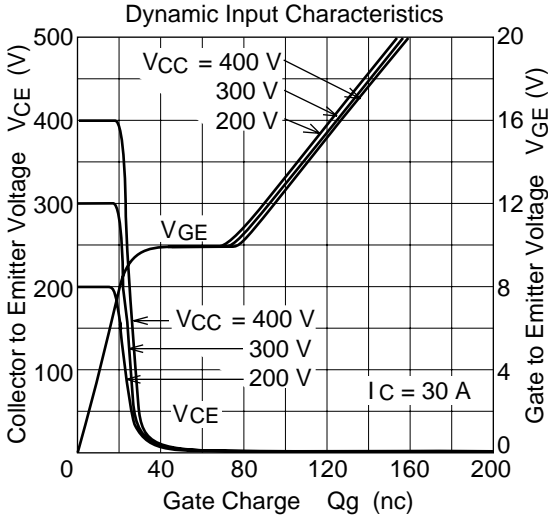
Table 2 Electrical Characteristics (Ta = 25°C)

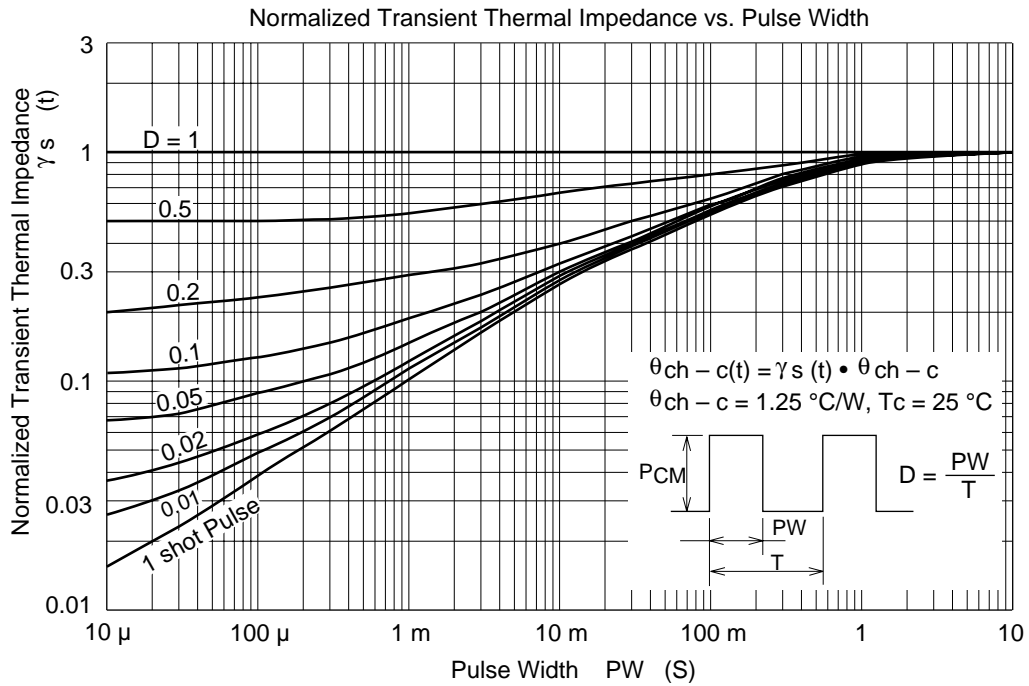
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CES}$	600	—	—	V	$I_C = 100 \mu A, V_{GE} = 0$
Zero gate voltage collector current	I_{CES}	—	—	0.5	mA	$V_{CE} = 600 V, V_{GE} = 0$
Gate to emitter leak current	I_{GES}	—	—	± 1	μA	$V_{GE} = \pm 20 V, V_{CE} = 0$
Gate to emitter cutoff current	$V_{GE(off)}$	3.0	—	5.0	V	$I_C = 1 mA, V_{CE} = 10 V$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	2.0	—	V	$I_C = 15 A, V_{GE} = 15 V$
Collector to emitter saturation voltage	$V_{CE(sat)2}$	—	2.6	3.3**	V	$I_C = 30 A, V_{GE} = 15 V$
Input capacitance	C_{ies}	—	2600	—	pF	$V_{CE} = 10 V, V_{GE} = 0, f = 1 MHz$
Switching time	t_r	—	160	—	ns	$I_C = 30 A,$ $R_L = 10 \Omega,$ $V_{GE} = \pm 15 V$ $R_g = 50 \Omega$
	t_{on}	—	300	—		
	t_f	—	300	600		
	t_{off}	—	600	1200		

** $V_{CE(sat)2}$ is specified at the correlated test condition ($I_C=20A$)

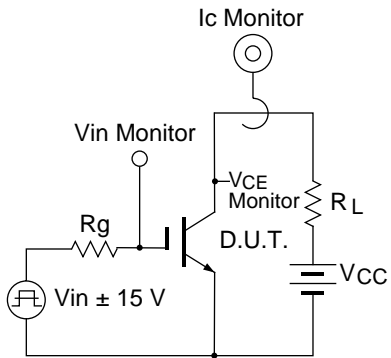




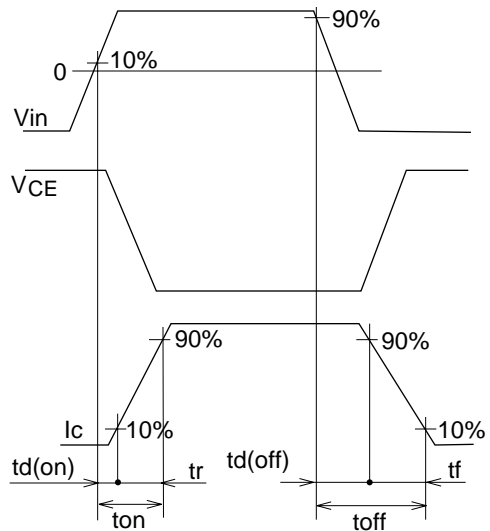




Switching Time Test Circuit

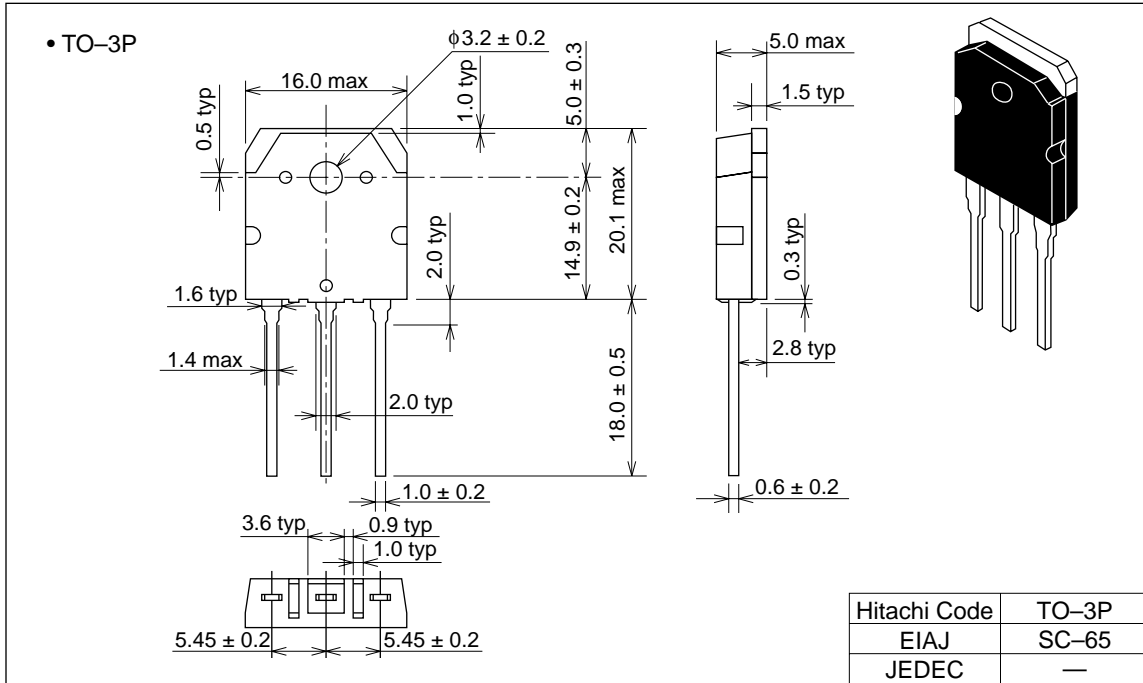


Waveforms



Package Dimensions

Unit : mm



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