

2SH28

Silicon N Channel IGBT
High Speed Power Switching

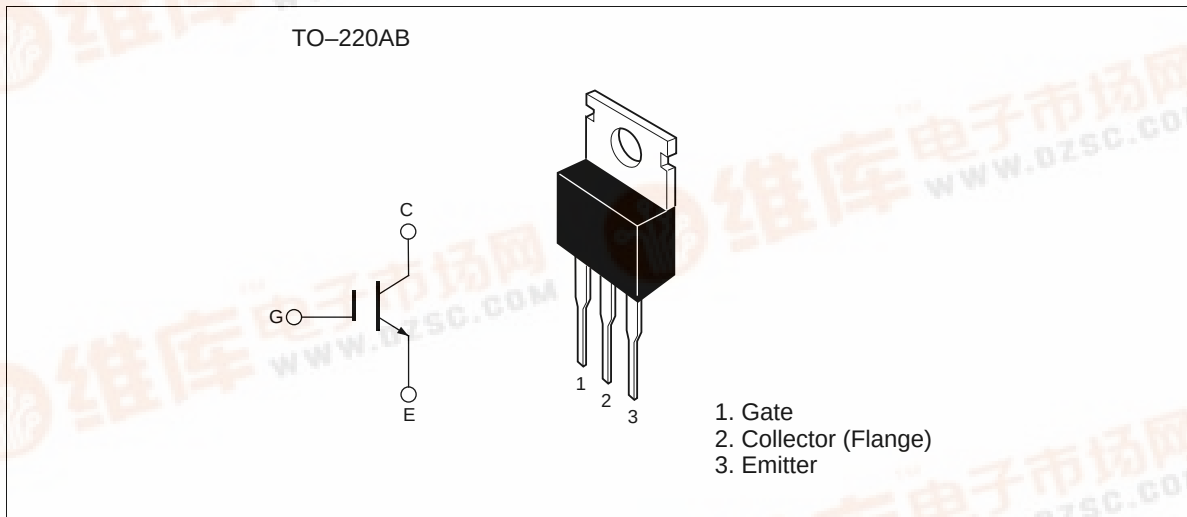
HITACHI

ADE-208-790A(Z)
2nd. Edition
May 1999

Features

- High speed switching
- Low on-voltage

Outline



2SH28

Absolute Maximum Ratings (Ta = 25°C)

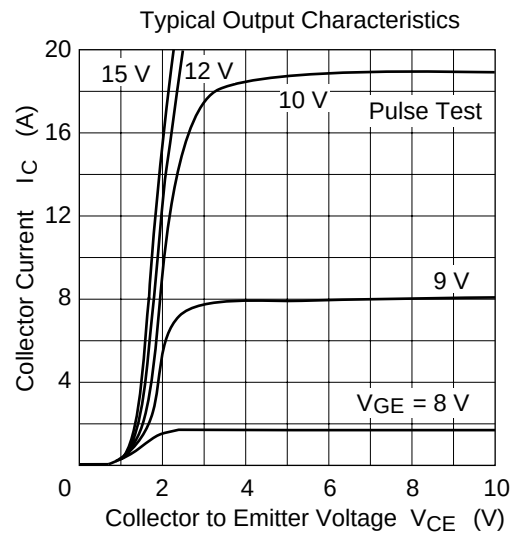
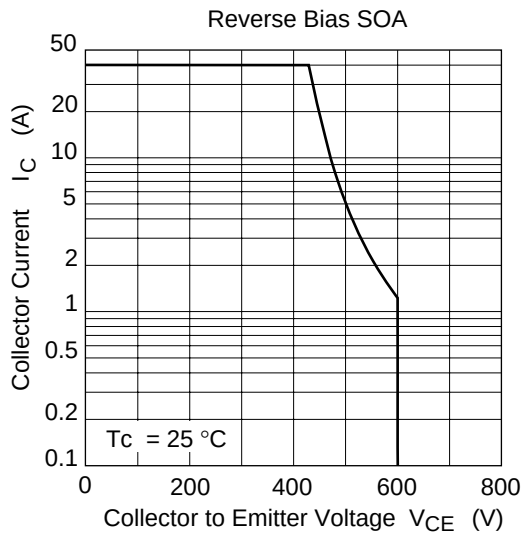
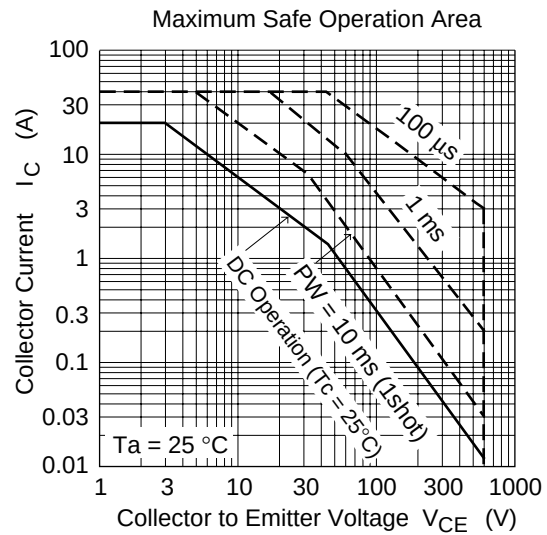
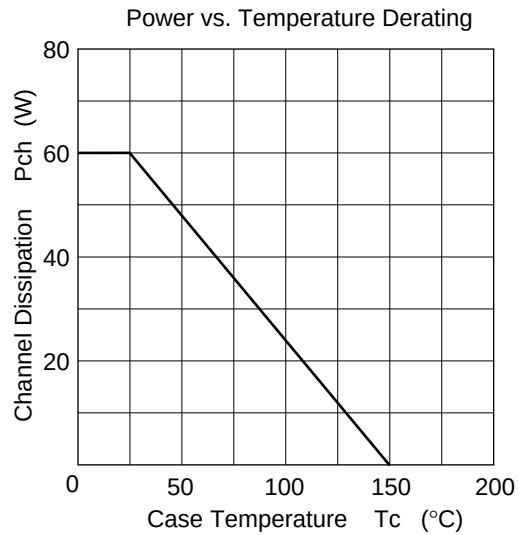
Item	Symbol	Ratings	Unit
Collector to Emitter voltage	V_{CES}	600	V
Gate to Emitter voltage	V_{GES}	±20	V
Collector current	I_C	20	A
Collector peak current	$i_{c(peak)}$	40	A
Collector dissipation	P_C ^{Note1}	60	W
Channel temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

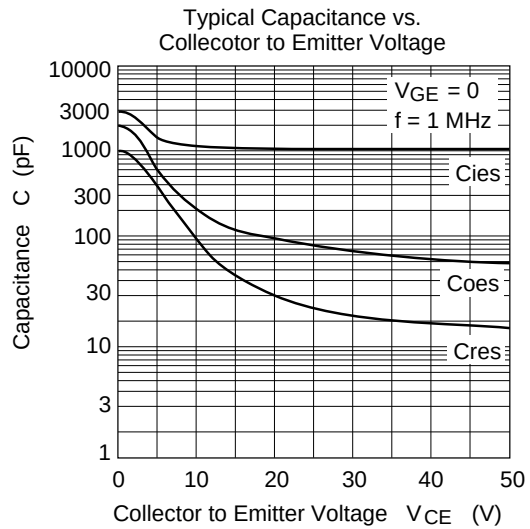
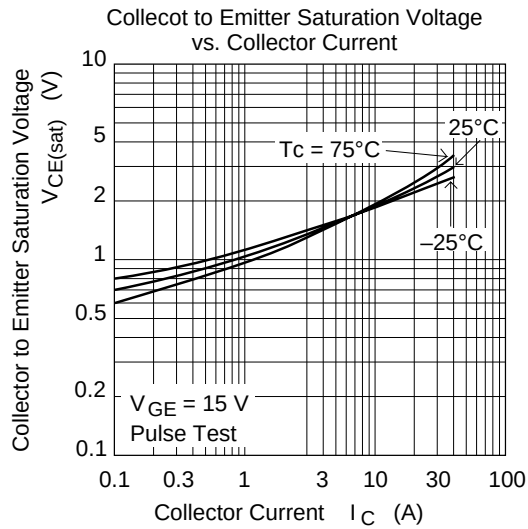
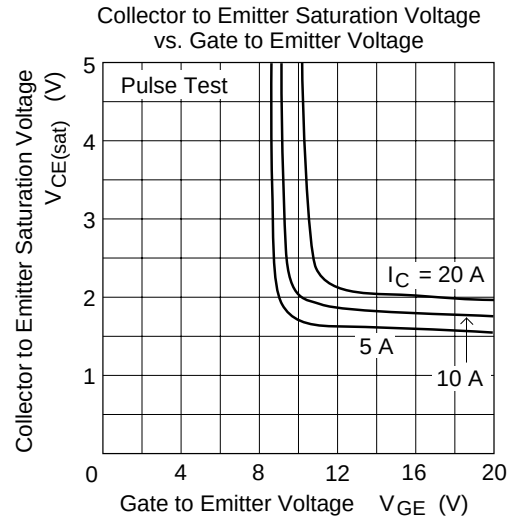
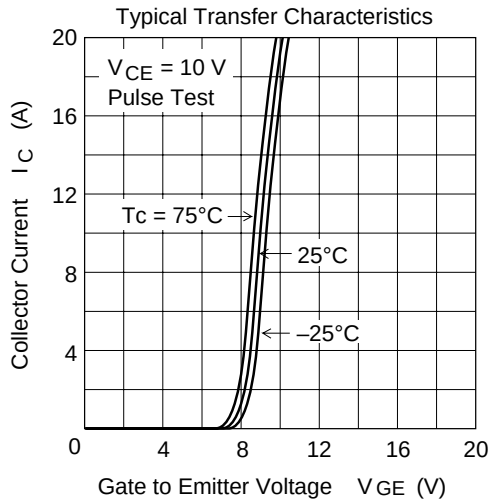
Note: 1. Value at Tc = 25°C

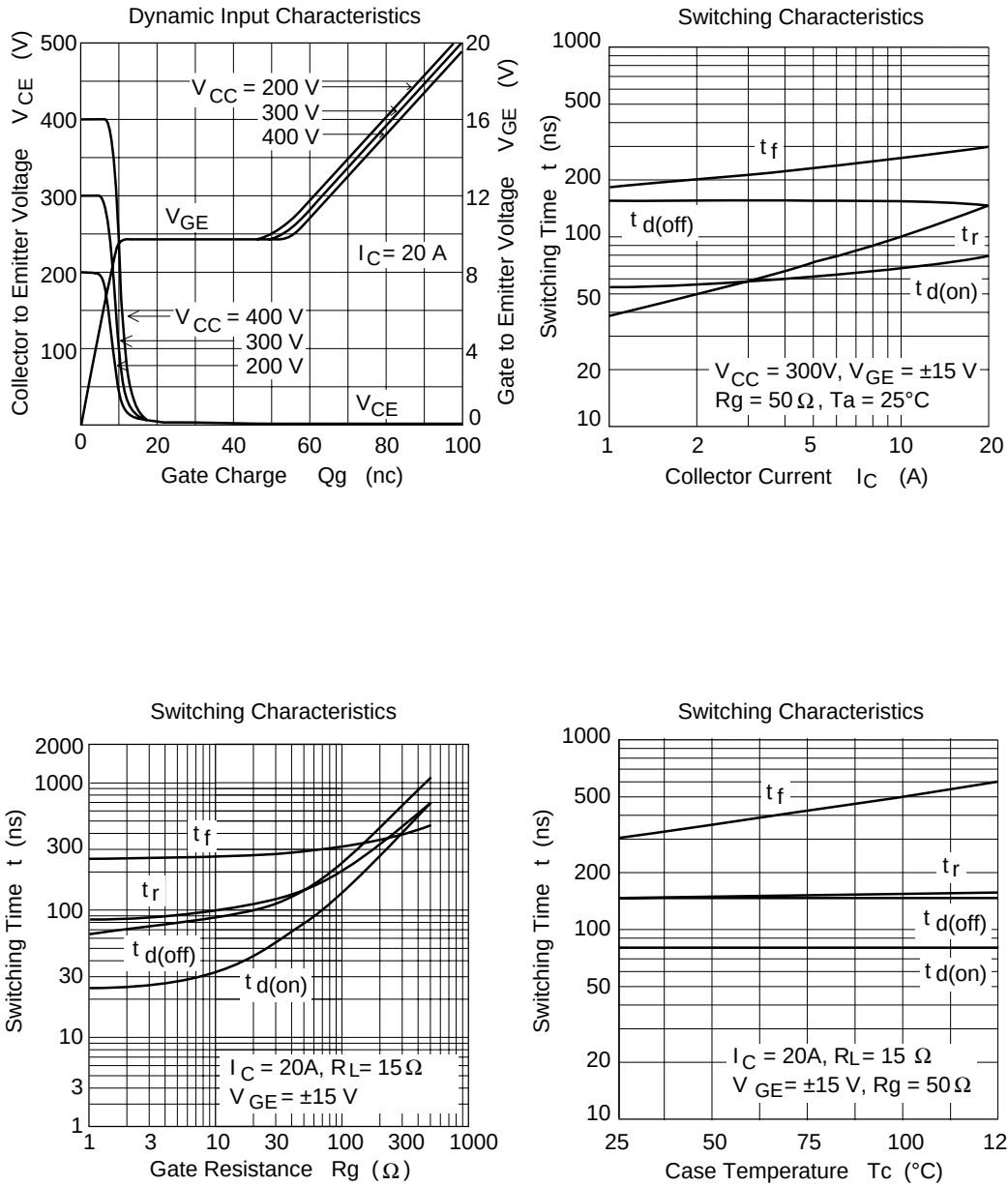
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I_{CES}	—	—	100	μA	$V_{CE} = 600V, V_{GE} = 0$
Gate to emitter leak current	I_{GES}	—	—	±1	μA	$V_{GE} = \pm 20 V, V_{CE} = 0$
Gate to emitter cutoff voltage	$V_{GE(off)}$	6.0	—	8.0	V	$I_C = 20 \text{ mA}, V_{CE} = 10V$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	2.1	2.6	V	$I_C = 20 \text{ A}, V_{GE} = 15V$
Input capacitance	Cies	—	1200	—	pF	$V_{CE} = 10V, V_{GE} = 0$ $f = 1MHz$
Switching time	t_r	—	150	—	ns	$I_C = 20 \text{ A}$
	t_{on}	—	230	—	ns	$R_L = 15 \Omega$
	t_f	—	300	600	ns	$V_{GS} = \pm 15V$
	t_{off}	—	450	900	ns	$R_g = 50 \Omega$

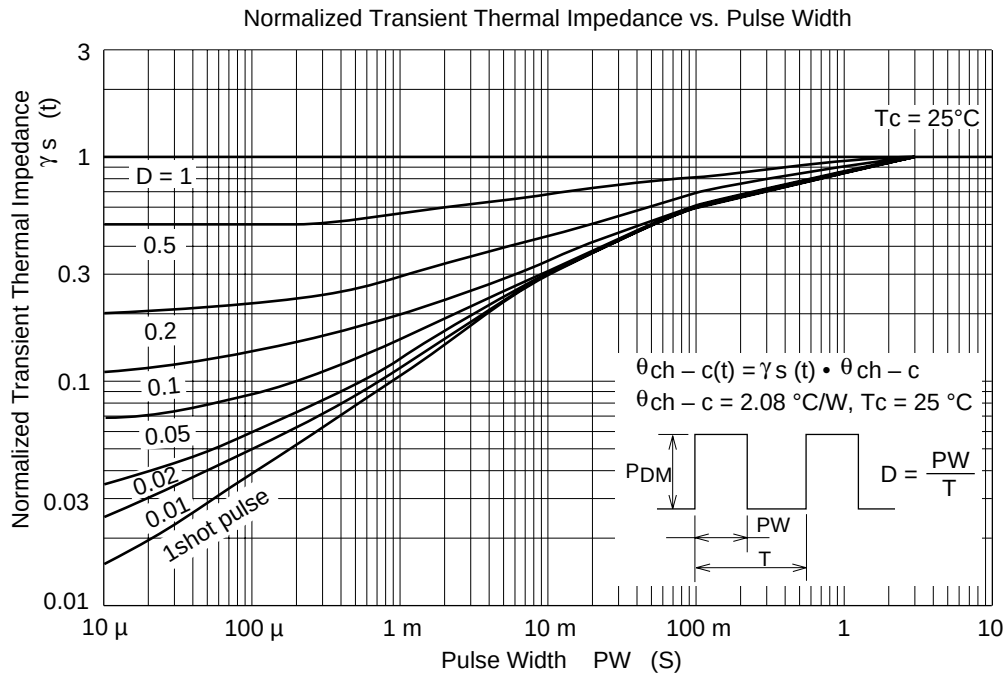
Main Characteristics



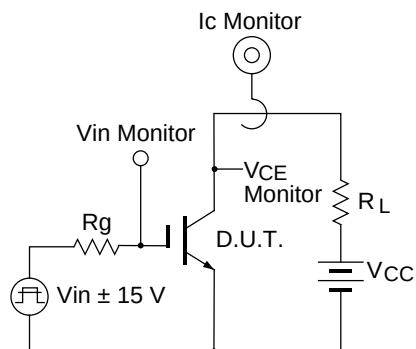




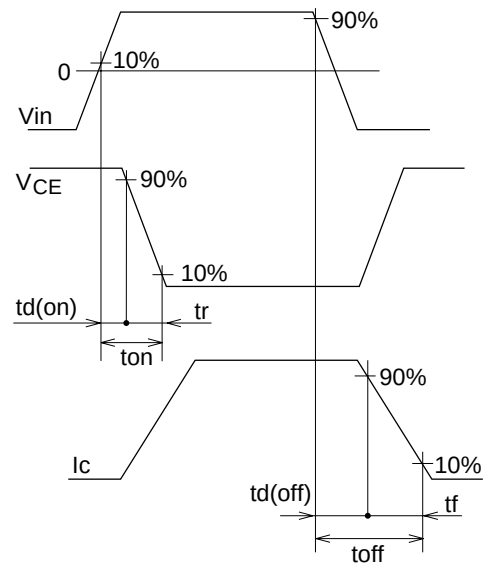
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Switching Time Test Circuit



Waveform



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