2SD1113(K)

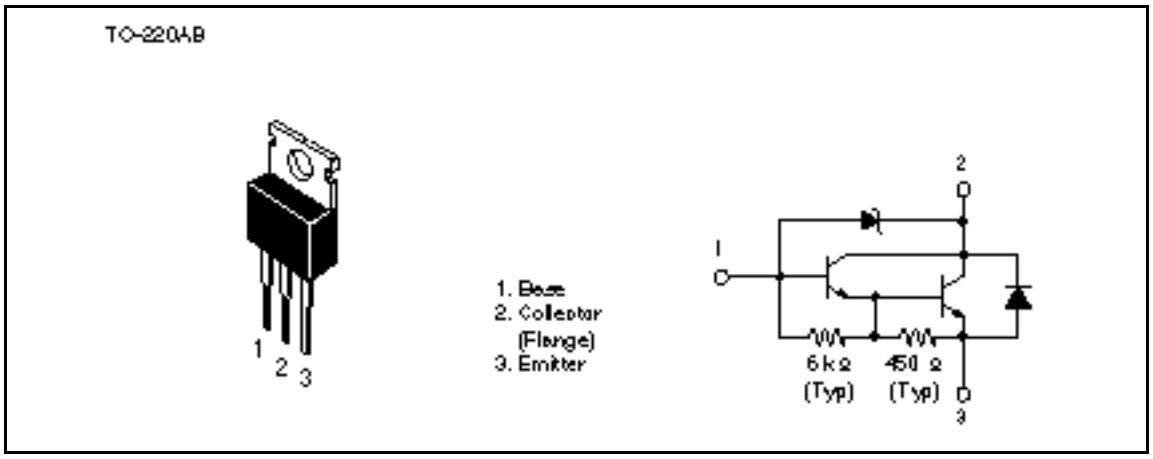
Silicon NPN Triple Diffused

HITACHI

Application

Igniter

Outline



Absolute Maximum Ratings (Ta = 25°C)

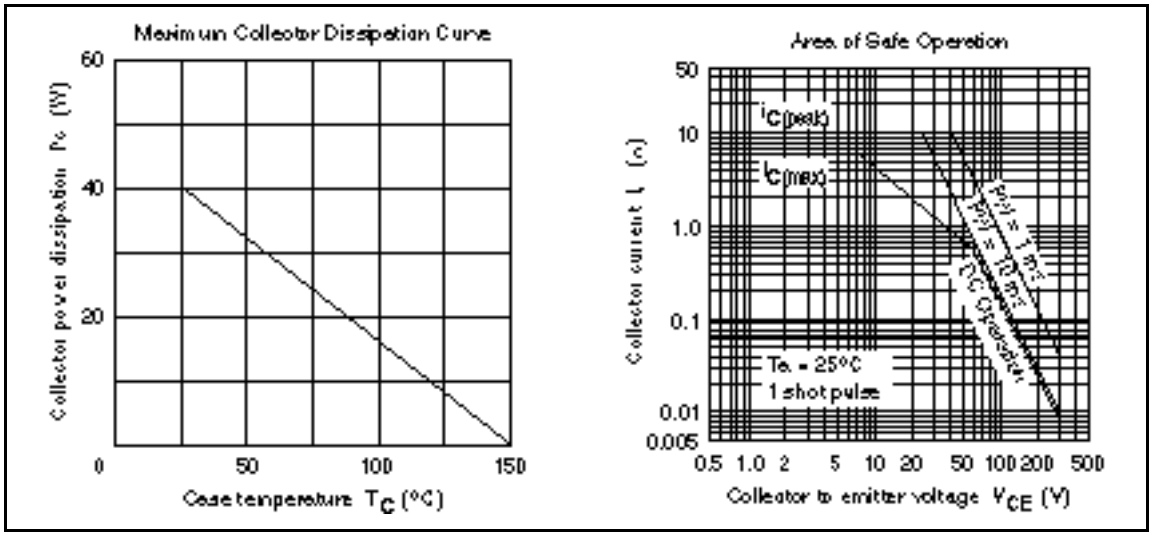
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	300	V
Collector to emitter voltage	V_{CEO}	300	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	6	A
Collector peak current	$I_{C(peak)}$	10	A
Collector power dissipation	P_C*[1]	40	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

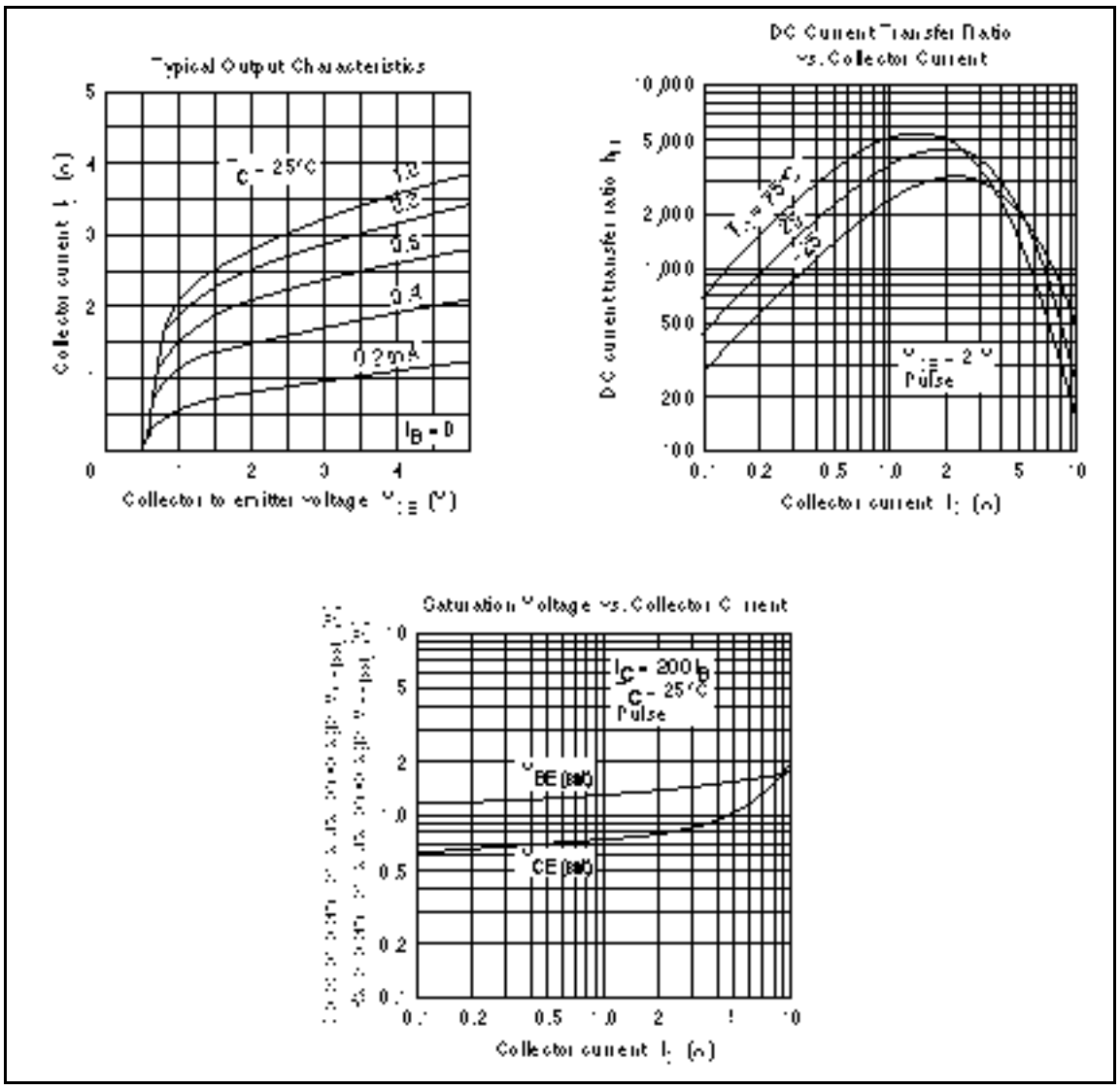
Note: 1. Value at T_C = 25°C.

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	300	—	500	V	I_C = 0.1 mA, I_E = 0
Collector to emitter sustain voltage	$V_{CEO(sus)}$	300	—	—	V	I_C = 3 A, PW = 50 µs, f = 50 Hz, L = 10 mH
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	I_E = 50 mA, I_C = 0
Collector cutoff current	I_{CEO}	—	—	100	µA	V_{CE} = 300 V, R_{BE} = ∞
DC current transfer ratio	h_{FE}	500	—	—		V_{CE} = 2 V, I_C = 4 A*[1]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	I_C = 4 A, I_B = 40 mA*[1]
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	I_C = 4 A, I_B = 40 mA*[1]
Turn on time	t_{on}	—	2.0	—	µs	I_C = 4 A, I_{B1} = $-I_{B2}$ = 40 mA
Turn off time	t_{off}	—	23	—	µs	I_C = 4 A, I_{B1} = $-I_{B2}$ = 40 mA

Note: 1. Pulse test.




Typical Output Characteristics
Collector current I_C (A)
Collector to emitter voltage V_{CE} (V)
T_C = 25°C
1.2
1.0
0.8
0.6
0.4
0.2mA
I_B = 0
DC Current Transfer Ratio vs. Collector Current
DC current transfer ratio h_{FE}
Collector current I_C (A)
V_{CE} = 2 V
Pulse
Saturation Voltage vs. Collector Current
I_C = 200 I_B
T_C = 25°C
Pulse
$V_{BE(sat)}$
$V_{CE(sat)}$
Collector current I_C (A)

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