TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

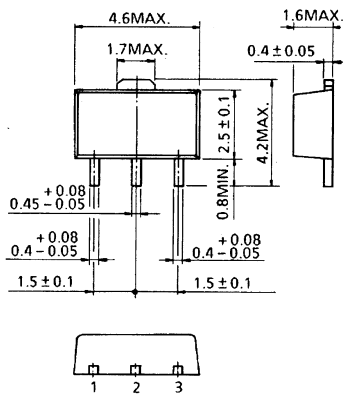
2SC2982

Storobo Flash Applications

Medium Power Amplifier Applications

- High DC current gain and excellent linearity
  : $h_{FE\ (1)}$ = 140 to 600 (V_{CE} = 1 V, I_C = 0.5 A)
  : $h_{FE\ (2)}$ = 70 (min), 140 (typ.), (V_{CE} = 1 V, I_C = 2 A)
- Low saturation voltage
  : $V_{CE\ (sat)}$ = 0.5 V (max) (I_C = 2 A, I_B = 50 mA)
- Small flat package
- P_C = 1.0 to 2.0 W (mounted on a ceramic substrate)
- Complementary to 2SA1314

Unit: mm



1. Base
2. Collector (heat sink)
3. Emitter

JEDEC	—
JEITA	SC-62
TOSHIBA	2-5K1A

Weight: 0.05 g (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	30	V
Collector-emitter voltage		V_{CES}	30	V
		V_{CEO}	10	
Emitter-base voltage		V_{EBO}	6	V
Collector current	DC	I_C	2	A
	Pulse (Note 1)	I_{CP}	4	
Base current	DC	I_B	0.4	A
	Pulse (Note 1)	I_{BP}	0.8	
Collector power dissipation		P_C	500	mW
		P_C (Note 2)	1000	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55 to 150	°C

Note 1: Pulse test: Pulse width = 10 ms (max), duty cycle = 30% (max)

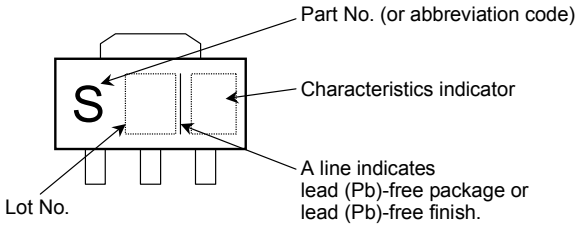
Note 2: 2SC2982 mounted on a ceramic substrate (250 mm^2 × 0.8 t)

Electrical Characteristics (Ta = 25°C)

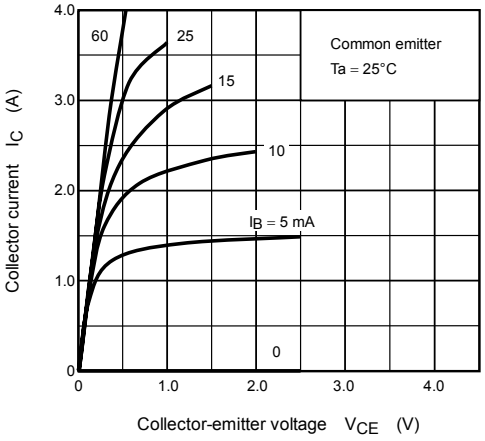
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 30 V, I_E = 0	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 6 V, I_C = 0	—	—	0.1	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	10	—	—	V
Emitter-base breakdown voltage	$V_{(BR)\ EBO}$	I_E = 1 mA, I_C = 0	6	—	—	V
DC current gain	$h_{FE\ (1)}$ (Note 3)	V_{CE} = 1 V, I_C = 0.5 A	140	—	600	—
	$h_{FE\ (2)}$	V_{CE} = 1 V, I_C = 2 A	70	140	—	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 2 A, I_B = 50 mA	—	0.2	0.5	V
Base-emitter voltage	V_{BE}	V_{CE} = 1 V, I_C = 2 A	—	0.86	1.5	V
Transition frequency	f_T	V_{CE} = 1 V, I_C = 0.5 A	—	150	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	27	—	pF

Note 3: $h_{FE\ (1)}$ classification A: 140 to 240, B: 200 to 330, C: 300 to 450, D: 420 to 600

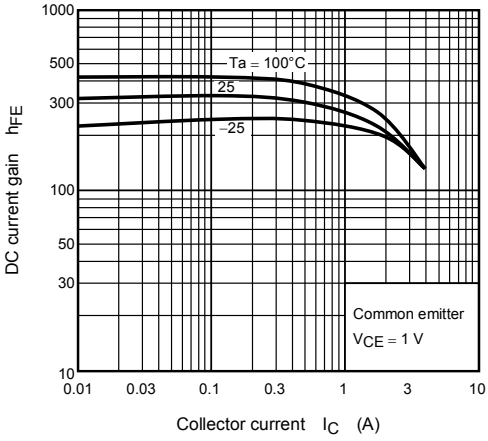
Marking



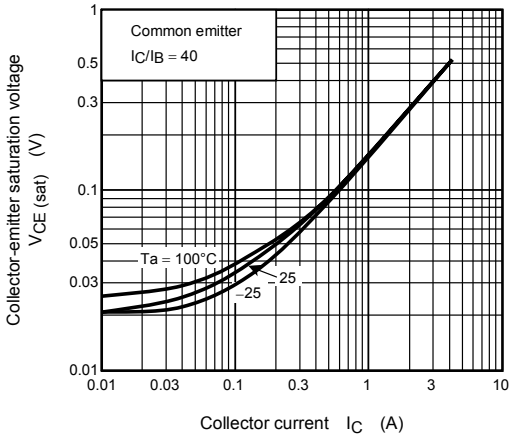
$I_C - V_{CE}$



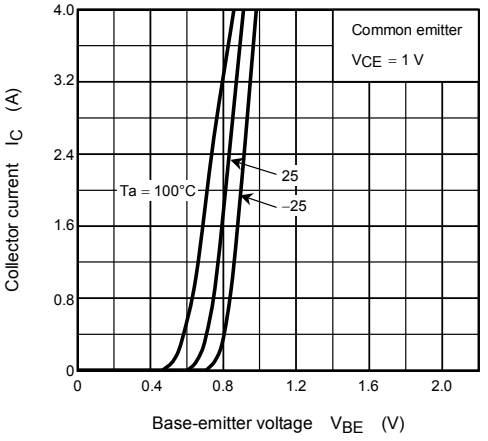
$h_{FE} - I_C$



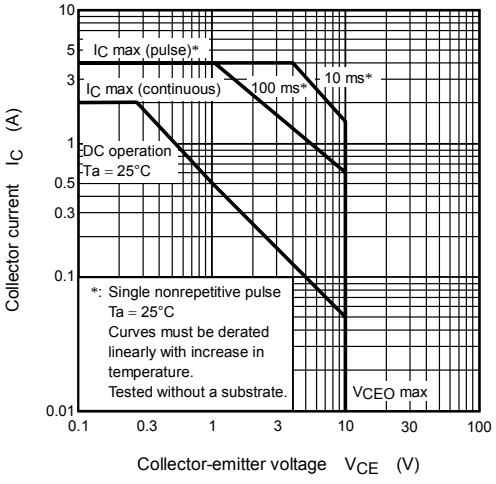
$V_{CE\ (sat)} - I_C$



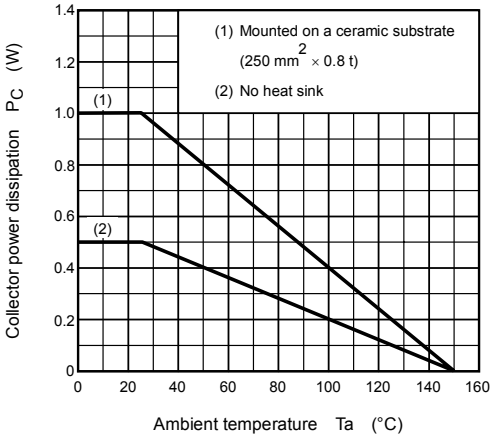
$I_C - V_{BE}$



Safe Operating Area



$P_C - Ta$



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