

2SA1242

Strobe Flash Applications
 Medium Power Amplifier Applications

- Excellent hFE linearity
 : hFE (1) = 100 to 320 ($V_{CE} = -2\text{ V}$, $I_C = -0.5\text{ A}$)
 : hFE (2) = 70 (min) ($V_{CE} = -2\text{ V}$, $I_C = -4\text{ A}$)
- Low collector saturation voltage
 : $V_{CE(sat)} = -1.0\text{ V (max)}$ ($I_C = -4\text{ A}$, $I_B = -0.1\text{ A}$)
- High power dissipation
 : $P_C = 10\text{ W}$ ($T_c = 25^\circ\text{C}$), $P_C = 1.0\text{ W}$ ($T_a = 25^\circ\text{C}$)

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

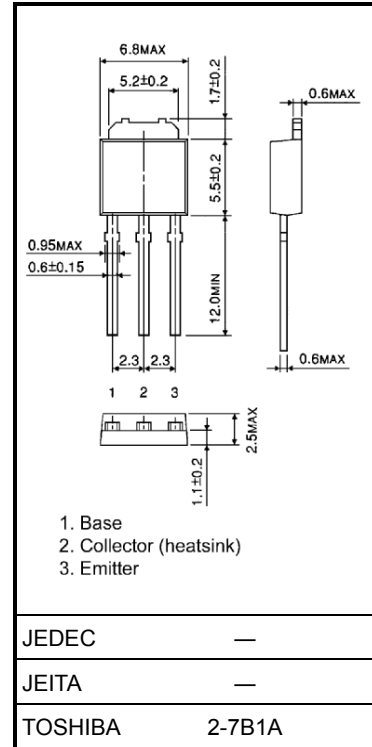
Characteristics	Symbol	Rating	Unit	
Collector-base voltage	V_{CB0}	-35	V	
Collector-emitter voltage	V_{CE0}	-20	V	
Emitter-base voltage	V_{EB0}	-8	V	
Collector current	DC	I_C	-5	A
	Pulsed (Note 1)	I_{CP}	-8	
Base current	I_B	-0.5	A	
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1.0	W
	$T_c = 25^\circ\text{C}$		10	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$	

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

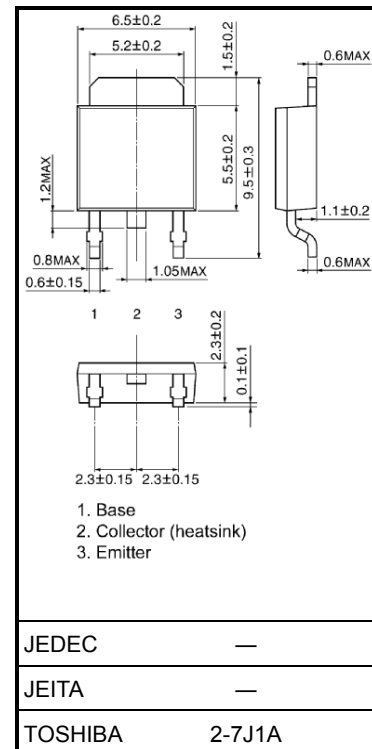
Note 2: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm



Weight: 0.36 g (typ.)



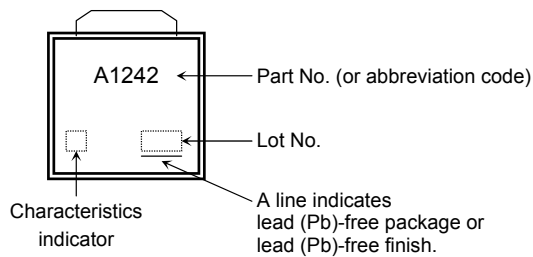
Weight: 0.36 g (typ.)

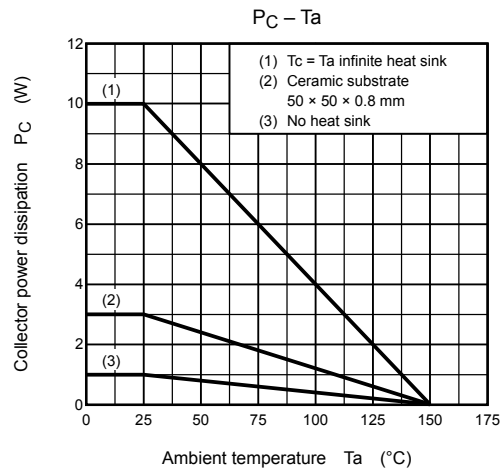
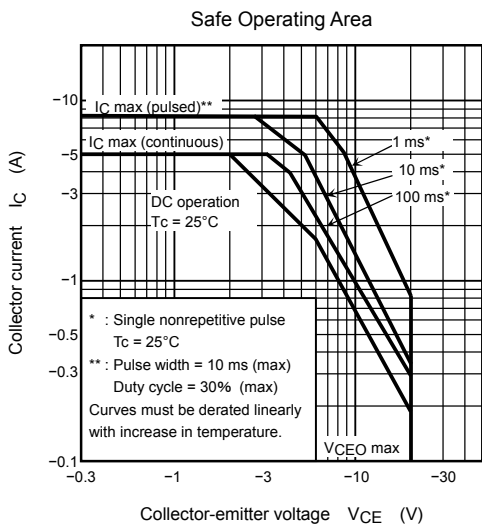
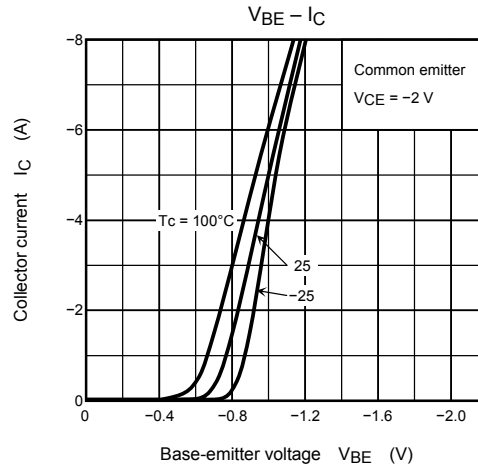
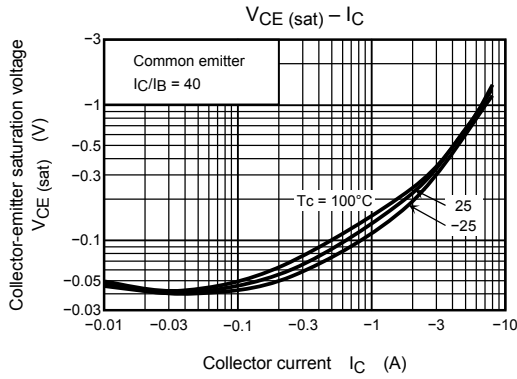
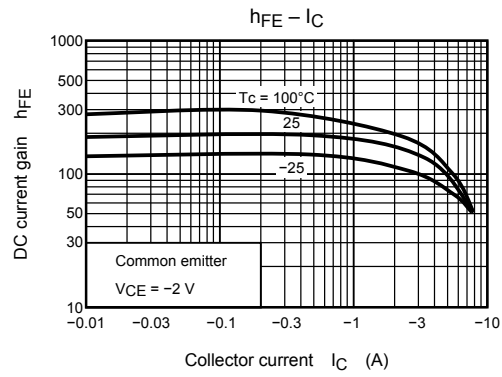
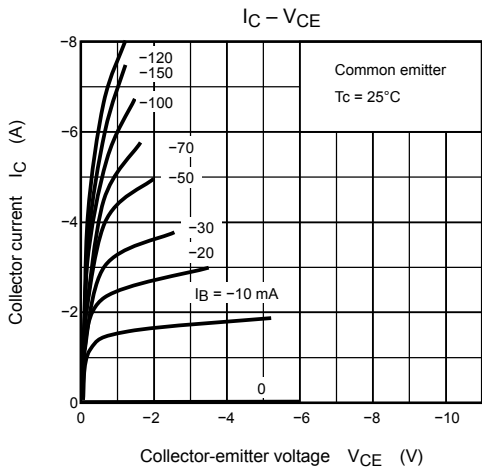
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = -35\text{ V}, I_E = 0$	—	—	-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -8\text{ V}, I_C = 0$	—	—	-100	nA
Collector-emitter breakdown voltage	V_{CEO}	$I_C = -10\text{ mA}, I_B = 0$	-20	—	—	V
Emitter-base breakdown voltage	V_{EBO}	$I_E = -1\text{ mA}, I_C = 0$	-8	—	—	V
DC current gain	$h_{FE(1)}$ (Note 3)	$V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$	100	—	320	
	$h_{FE(2)}$	$V_{CE} = -2\text{ V}, I_C = -4\text{ A}$	70	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -4\text{ A}, I_B = -0.1\text{ A}$	—	—	-1.0	V
Base-emitter voltage	V_{BE}	$V_{CE} = -2\text{ V}, I_C = -4\text{ A}$	—	—	-1.5	V
Transition frequency	f_T	$V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$	—	170	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	62	—	pF

Note 3: $h_{FE(1)}$ classification O: 100 to 200, Y: 160 to 320

Marking





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20070701-EN

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