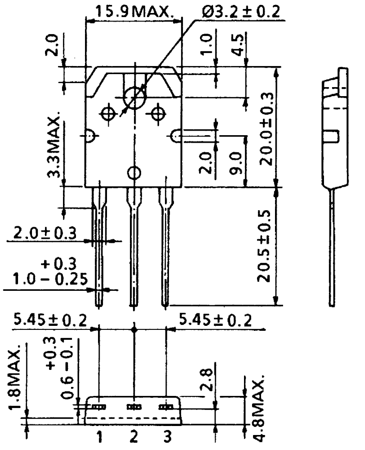
TOSHIBA Transistor   Silicon PNP Triple Diffused Type

2SA1941

Power Amplifier Applications

Unit: mm



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

JEDEC	―
JEITA	―
TOSHIBA	2-16C1A

Weight: 4.7 g (typ.)

- High breakdown voltage: V_{CEO} = −140 V (min)
- Complementary to 2SC5198
- Recommended for 70-W high-fidelity audio frequency amplifier output stage.

Absolute Maximum Ratings (T_a = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	−140	V
Collector-emitter voltage	V_{CEO}	−140	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−10	A
Base current	I_B	−1	A
Collector power dissipation (T_c = 25°C)	P_C	100	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

Note: 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).

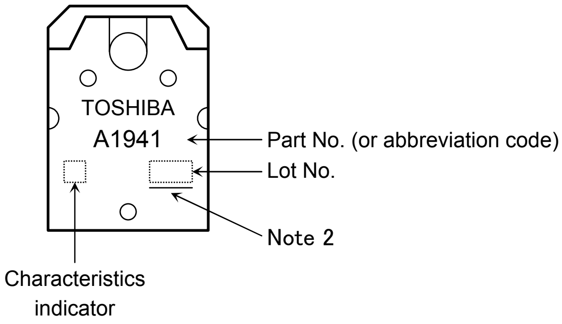
Start of commercial production
1994-06

Electrical Characteristics (T_a = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −140 V, I_E = 0	—	—	−5.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = −5 V, I_C = 0	—	—	−5.0	μA
Collector-emitter breakdown voltage	$V_{(BR)\,CEO}$	I_C = −50 mA, I_B = 0	−140	—	—	V
DC current gain	$h_{FE\,(1)}$ (Note)	V_{CE} = −5 V, I_C = −1 A	55	—	160	
	$h_{FE\,(2)}$	V_{CE} = −5 V, I_C = −5 A	35	83	—	
Collector-emitter saturation voltage	$V_{CE\,(sat)}$	I_C = −7 A, I_B = −0.7 A	—	−0.8	−2.0	V
Base-emitter voltage	V_{BE}	V_{CE} = −5 V, I_C = −5 A	—	−1.0	−1.5	V
Transition frequency	f_T	V_{CE} = −5 V, I_C = −1 A	—	30	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	320	—	pF

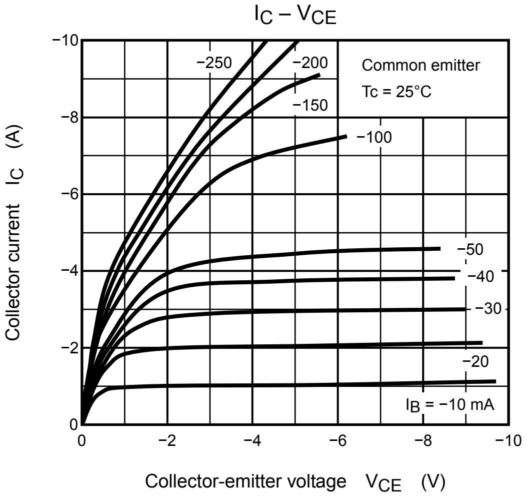
Note: $h_{FE\,(1)}$ classification R: 55 to 110, O: 80 to 160

Marking

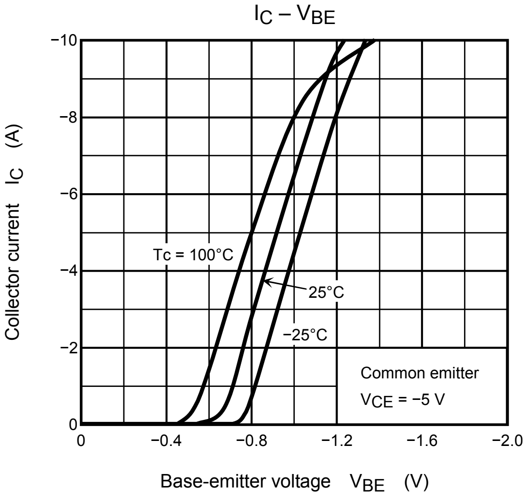


Note 2 : A line under a Lot No. identifies the indication of product Labels.
[[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

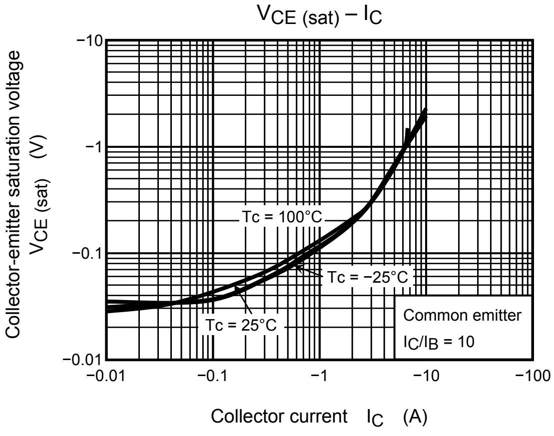
Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product.
The RoHS is the Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



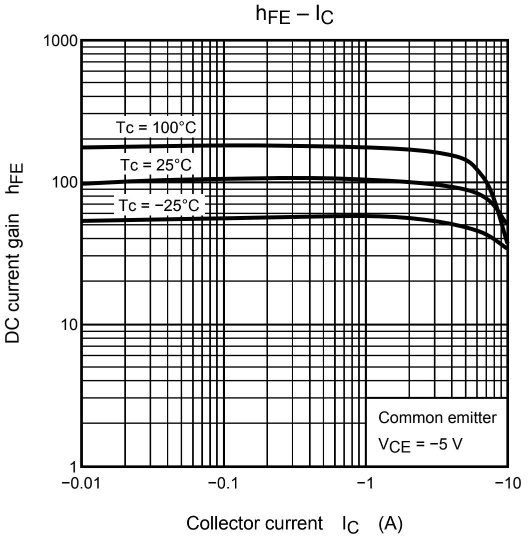
$I_C - V_{CE}$



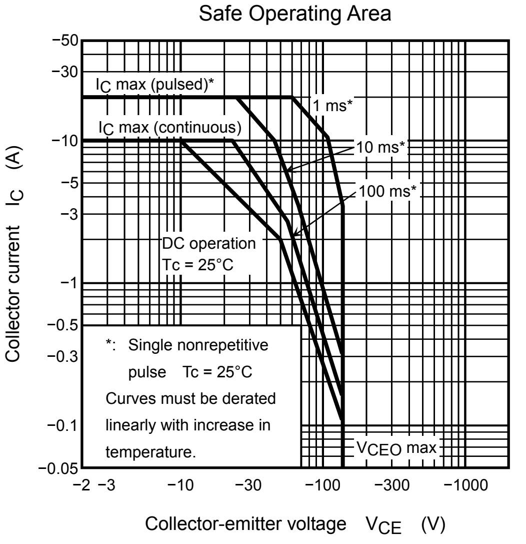
$I_C - V_{BE}$



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



$h_{FE} - I_C$



Safe Operating Area

*: Single nonrepetitive pulse Tc = 25°C
Curves must be derated linearly with increase in temperature.