

Q1, Q2 Common Absolute Maximum Ratings (Ta = 25 ℃)

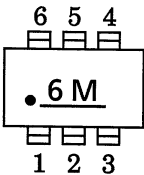
Characteristic	Symbol	Rating	Unit
Collector power dissipation	PC *	200	mW
Junction temperature	Tj	150	℃
Storage temperature range	Tstg	-55~150	℃

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.

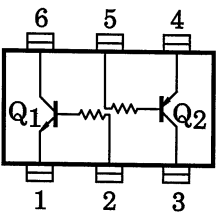
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

* : Total rating

Marking



Equivalent Circuit (Top View)



Q1 Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	Š	$V_{CB} = 50V, I_E = 0$	Š	Š	100	nA
Emitter cut-off current	I_{EBO}	Š	$V_{EB} = 5V, I_C = 0$	Š	Š	100	mA
DC current gain	h_{FE}	Š	$V_{CE} = 5V, I_C = 1mA$	120	Š	700	Š
Collector-emitter saturation voltage	$V_{CE(sat)}$	Š	$I_C = 5mA, I_B = 0.25mA$	Š	0.1	0.3	V
Transition frequency	f_T	Š	$V_{CE} = 10V, I_C = 5mA$	Š	250	Š	MHz
Collector output capacitance	C_{ob}	Š	$V_{CB} = 10V, I_E = 0, f = 1 MHz$	Š	3	6	pF

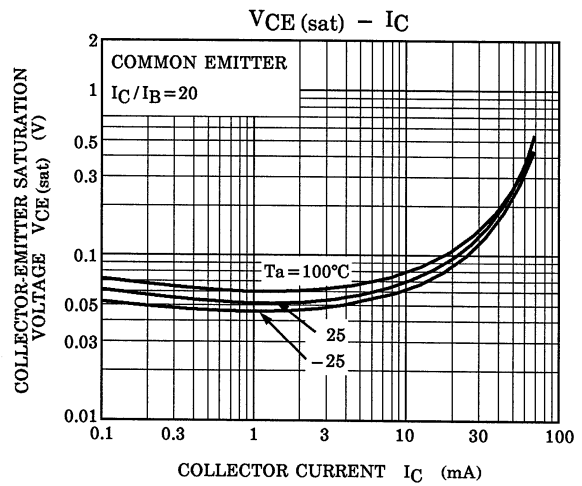
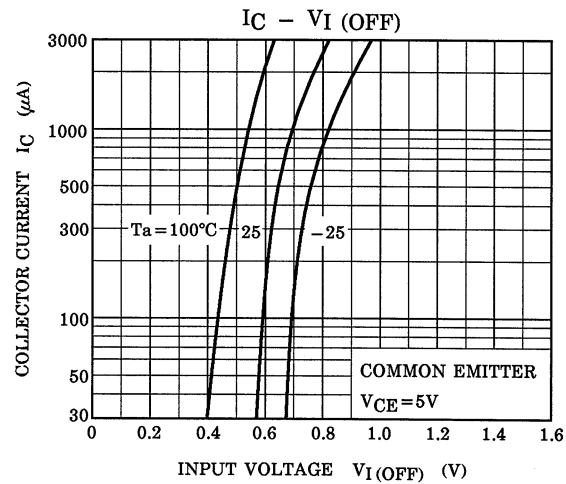
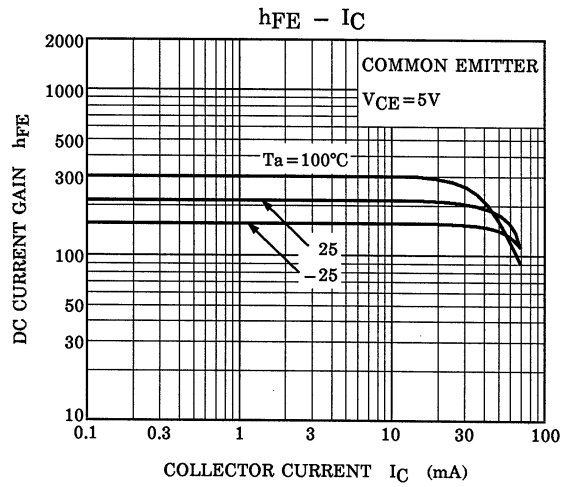
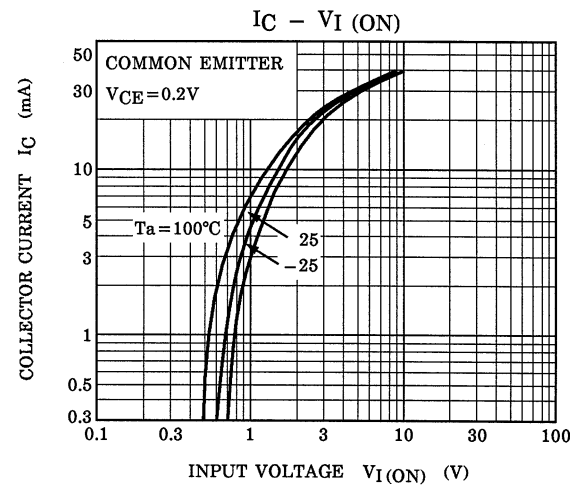
Q2 Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	Š	$V_{CB} = \acute{5}0V, I_E = 0$	Š	Š	$\acute{1}00$	nA
Emitter cut-off current	I_{EBO}	Š	$V_{EB} = \acute{5}V, I_C = 0$	Š	Š	$\acute{1}00$	mA
DC current gain	h_{FE}	Š	$V_{CE} = \acute{5}V, I_C = \acute{1}mA$	120	Š	400	Š
Collector-emitter saturation voltage	$V_{CE(sat)}$	Š	$I_C = \acute{5}mA, I_B = \acute{0}.25mA$	Š	$\acute{0}.1$	$\acute{0}.3$	V
Transition frequency	f_T	Š	$V_{CE} = \acute{1}0V, I_C = \acute{5}mA$	Š	200	Š	MHz
Collector output capacitance	C_{ob}	Š	$V_{CB} = \acute{1}0V, I_E = 0, f = 1MHz$	Š	3	6	pF

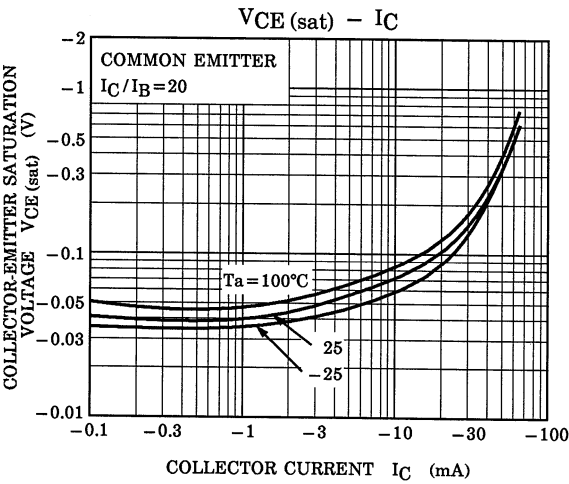
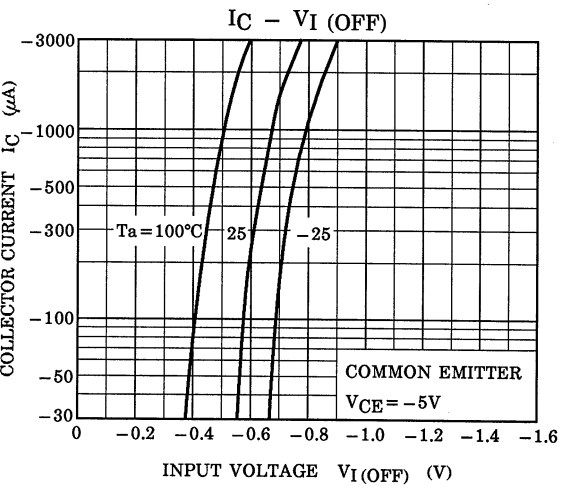
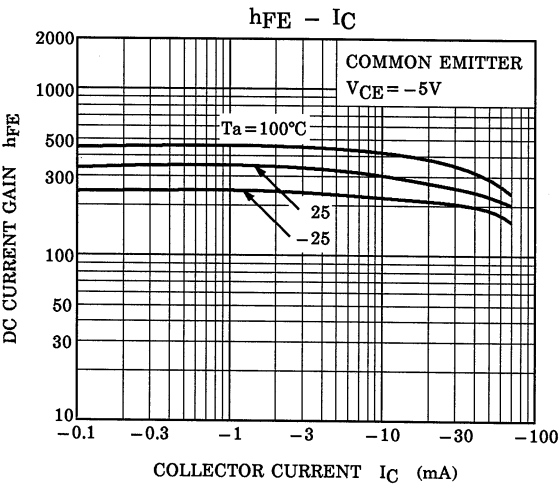
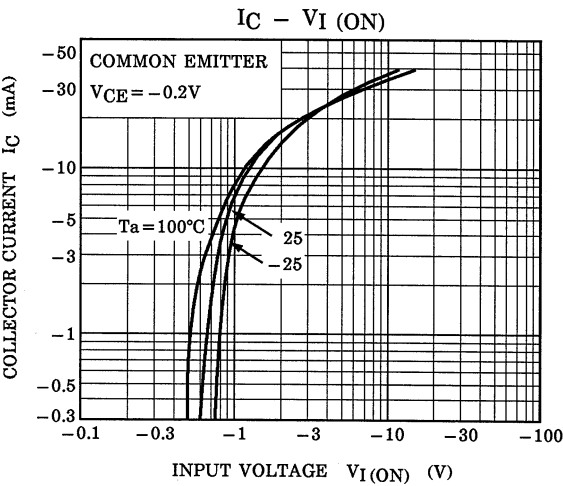
Q1, Q2 Common Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Input resistor	R1	Š	Š	7	10	13	k Ÿ

Q1



Q2



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