

2SA1755

Silicon PNP Epitaxial

Application

High speed switching

Table 1 Ordering Information

Type No.	h_{FE1}
2SA1755B	50 to 100
2SA1755C	80 to 160

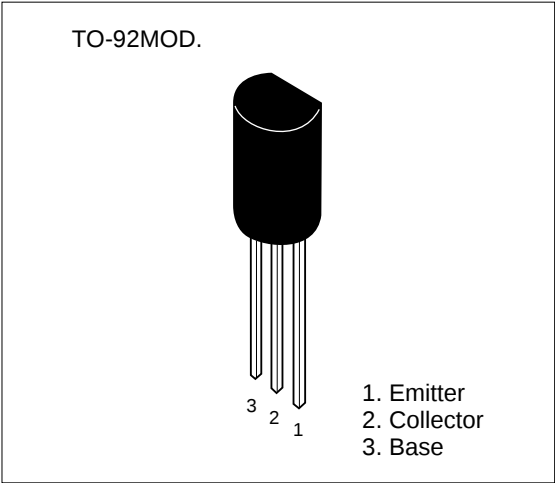


Table 2 Absolute Maximum Ratings (Ta = 25°C)

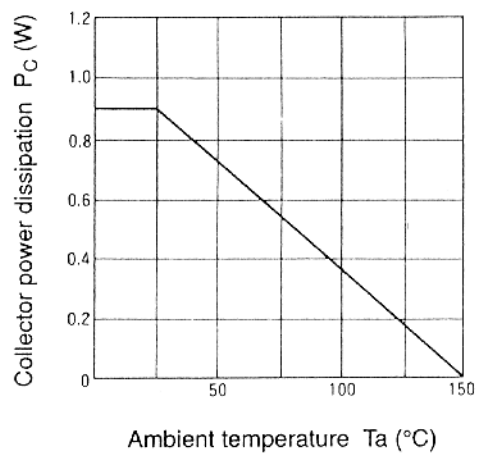
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	−100	V
Collector to emitter voltage	V_{CEO}	−80	V
Emitter to base voltage	V_{EBO}	−5	V
Collector current	I_C	−0.7	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

2SA1755

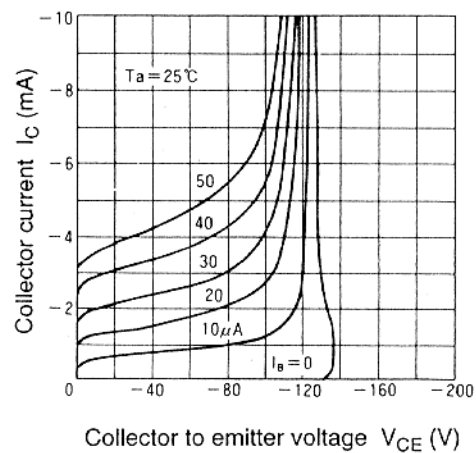
Table 3 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-100	—	—	V	$I_C = -10 \mu A, I_E = 0$
Collector to Emitter breakdown voltage	$V_{(BR)CEO}$	-80	—	—	V	$I_C = -5 mA, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	-1.0	μA	$V_{CB} = -30 V, I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	-1.0	μA	$V_{EB} = -3 V, I_E = 0$
DC current transfer ratio	h_{FE1}	50	—	100	$V_{CE} = -4 V, I_C = -50 mA$	
2SA1755B		80	—	160		
2SA1755C						
DC current transfer ratio	h_{FE2}	20	—	—		$V_{CE} = -4 V, I_C = -400 mA$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.5	V	$I_C = -150 mA, I_B = -15 mA$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	-1.1	V	$I_C = -150 mA, I_B = -15 mA$
Collector output capacitance	C_{ob}	—	—	35	pF	$V_{CB} = -10 V$ $I_E = 0$ $f = 1 MHz$
High frequency AC current transfer ratio	h_{fe}	1.0	—	—		$V_{CE} = -10 V, I_C = -20 mA$ $f = 100 MHz$
Turn on time	t_{on}	—	—	60	ns	$V_{CC} = -6.5 V$ $I_C = 10 I_{B1} = -150 mA$ $I_{B2} = 0$
Turn off time	t_{off}	—	—	400	ns	$V_{CC} = -6.5 V$ $I_C = 10 I_{B1} = -10 I_{B2}$ $= -150 mA$
Storage time	t_{stg}	—	—	350	ns	$V_{CC} = -6.5 V$ $I_C = 10 I_{B1} = -10 I_{B2}$ $= -150 mA$

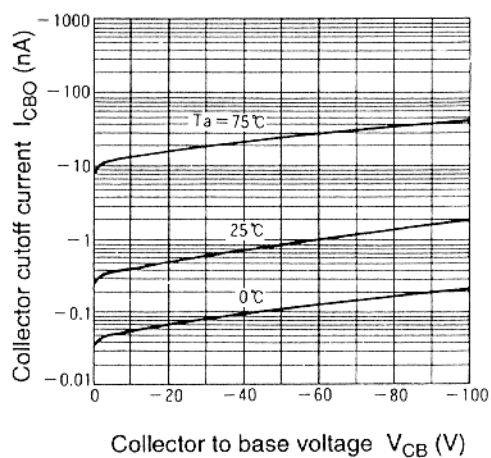
Maximum collector power dissipation curve



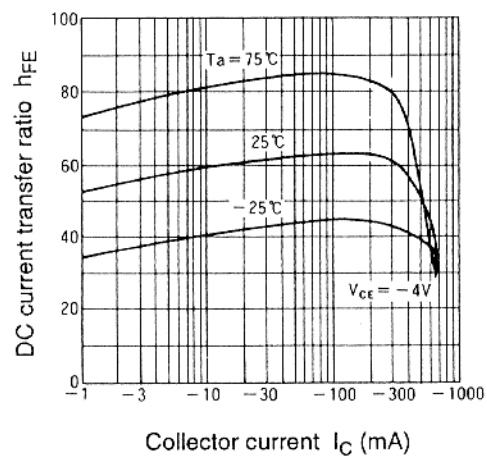
Typical output characteristics



Collector cutoff current vs. collector to base voltage

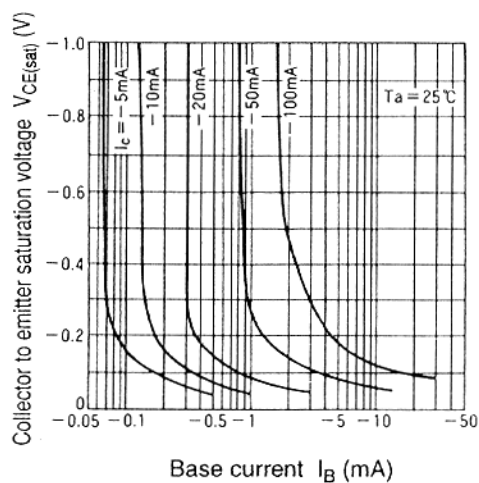


DC current transfer ratio vs. collector current

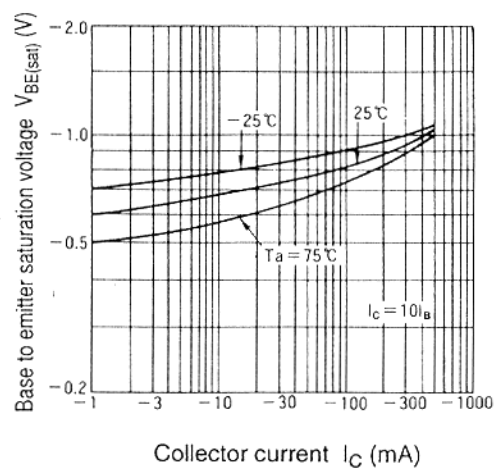


2SA1755

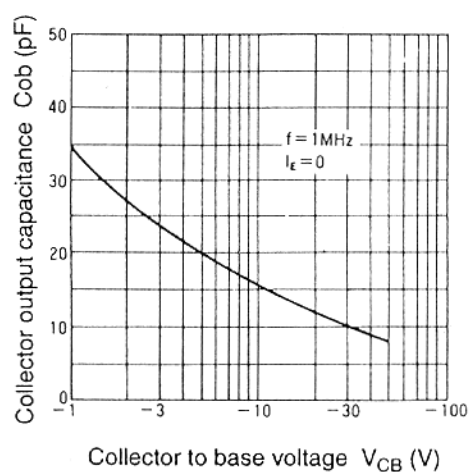
Collector to emitter saturation voltage
vs. base current



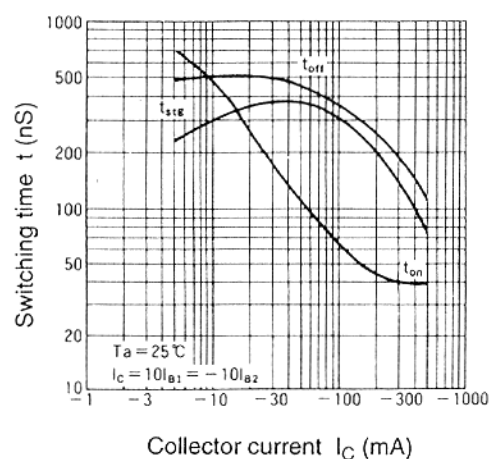
Base to emitter saturation voltage
vs. collector current



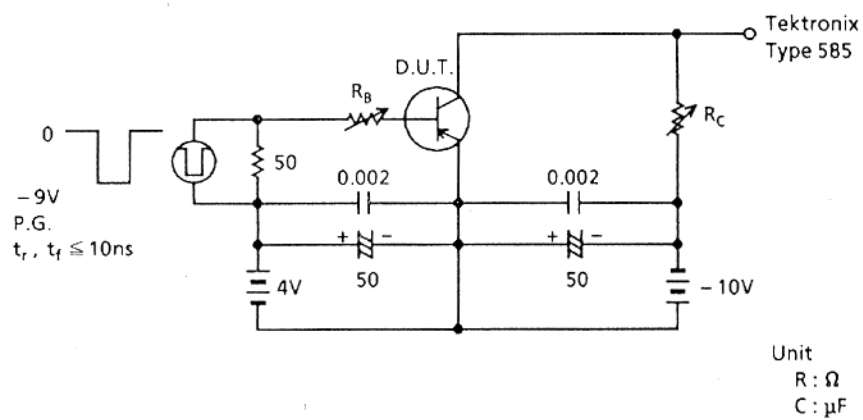
Collector output capacitance
vs. collector to base voltage



Switching time vs. collector current



Switching time test circuit



Transient thermal resistance

