

NPN SILICON EPITAXIAL TRANSISTOR

2SC4783

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DESCRIPTION

The 2SC4783 is NPN silicon epitaxial transistor.

FEATURES

- High DC current gain: $h_{FE2} = 200$ TYP.
- High voltage: $V_{CEO} = 50$ V

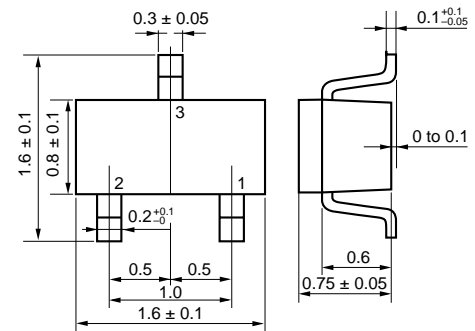
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current (DC)	$I_{C(DC)}$	100	mA
Collector Current (pulse) ^{Note1}	$I_{C(pulse)}$	200	mA
Total Power Dissipation ($T_A = 25^\circ\text{C}$) ^{Note2}	P_T	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to + 150	$^\circ\text{C}$

Notes 1. $PW \leq 10$ ms, Duty Cycle $\leq 50\%$

2. When mounted on ceramic substrate of $3.0\text{ cm}^2 \times 0.64\text{ mm}$

PACKAGE DRAWING (Unit: mm)



1: Emitter
2: Base
3: Collector

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 60\text{ V}, I_E = 0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5.0\text{ V}, I_C = 0$			100	nA
DC Current Gain ^{Note}	h_{FE1}	$V_{CE} = 6.0\text{ V}, I_C = 0.1\text{ mA}$	50			—
	h_{FE2}	$V_{CE} = 6.0\text{ V}, I_C = 1.0\text{ mA}$	90	200	600	—
Base to Emitter Voltage ^{Note}	V_{BE}	$V_{CE} = 6.0\text{ V}, I_C = 1.0\text{ mA}$		0.62		V
Collector Saturation Voltage ^{Note}	$V_{CE(sat)}$	$I_C = 100\text{ mA}, I_B = 10\text{ mA}$		0.15	0.3	V
Base Saturation Voltage ^{Note}	$V_{BE(sat)}$	$I_C = 100\text{ mA}, I_B = 10\text{ mA}$		0.86	1.0	V
Gain Bandwidth Product	f_T	$V_{CE} = 6.0\text{ V}, I_E = -10\text{ mA}$	150	250		MHz
Output Capacitance	C_{ob}	$V_{CE} = 6.0\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		3.0	4.0	pF

Note Pulsed: $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$

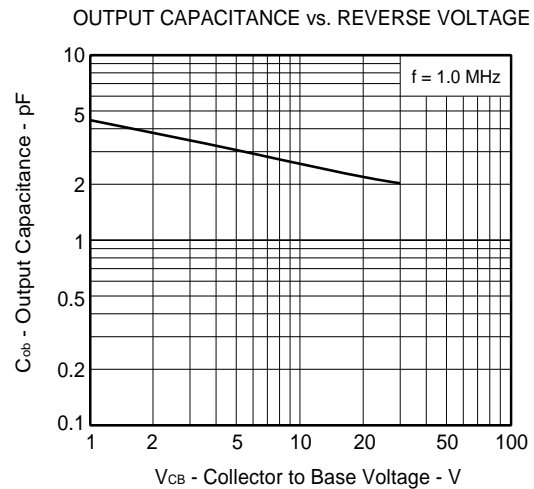
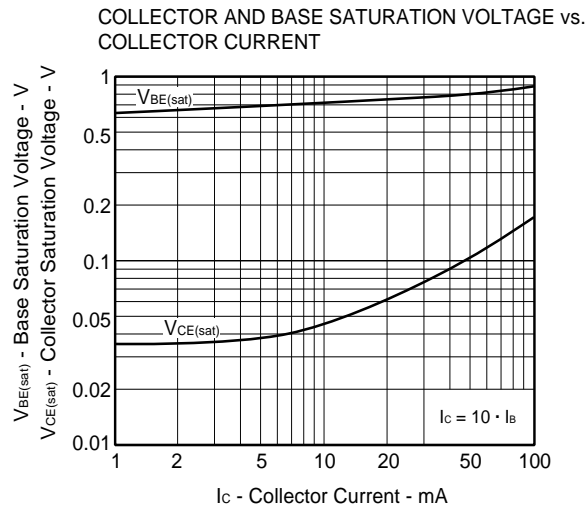
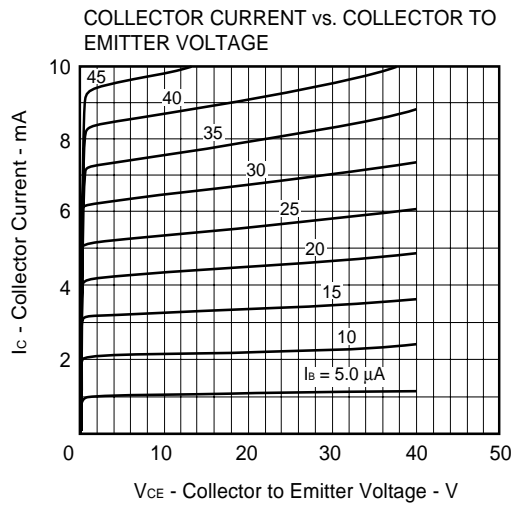
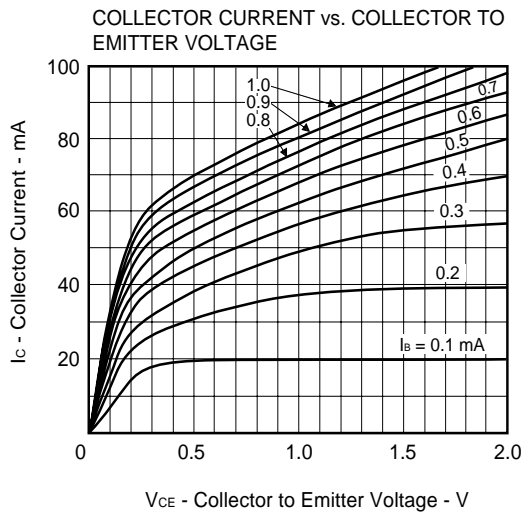
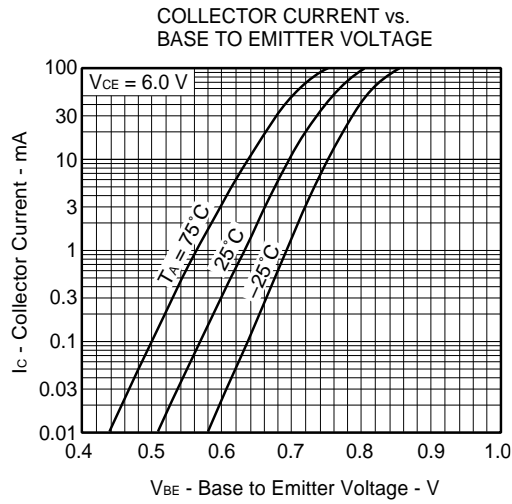
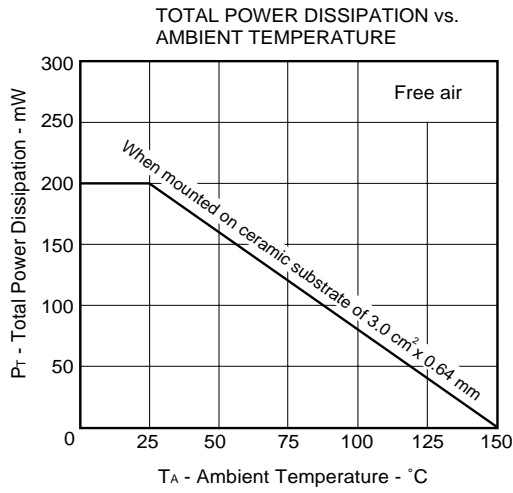
h_{FE} CLASSIFICATION

Marking	L4	L5	L6	L7
h_{FE2}	90 to 180	135 to 270	200 to 400	300 to 600

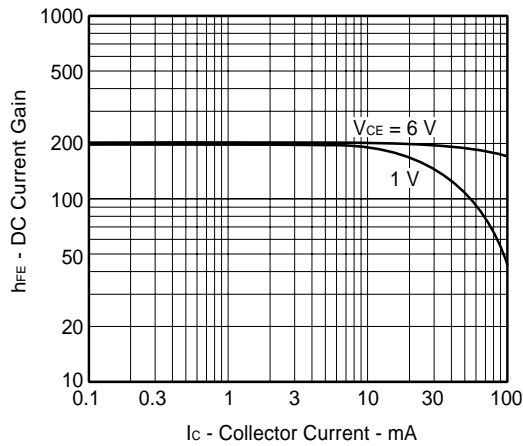
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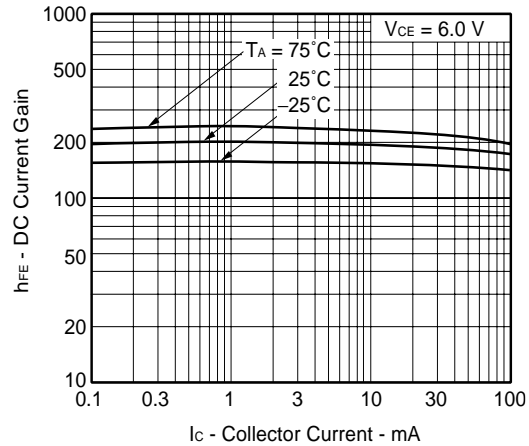
TYPICAL CHARACTERISTICS (T_A = 25°C)



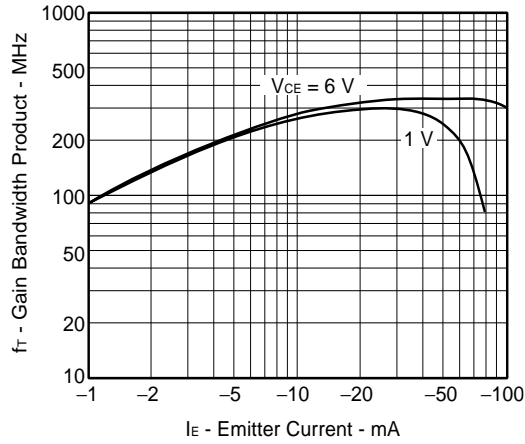
DC CURRENT GAIN vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



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