NEC

NPN SILICON EPITAXIAL TRANSISTOR
2SC4783

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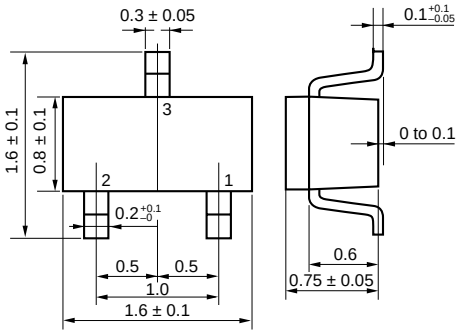
DESCRIPTION

The 2SC4783 is NPN silicon epitaxial transistor.

FEATURES

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

PACKAGE DRAWING (Unit: mm)



1: Emitter
2: Base
3: Collector

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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°C) **Note2**	P_T	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	–55 to + 150	°C

Notes 1. PW ≤ 10 ms, Duty Cycle ≤ 50%

2. When mounted on ceramic substrate of 3.0 cm^2 x 0.64 mm

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

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

Note Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2%

h_{FE} CLASSFICATION

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

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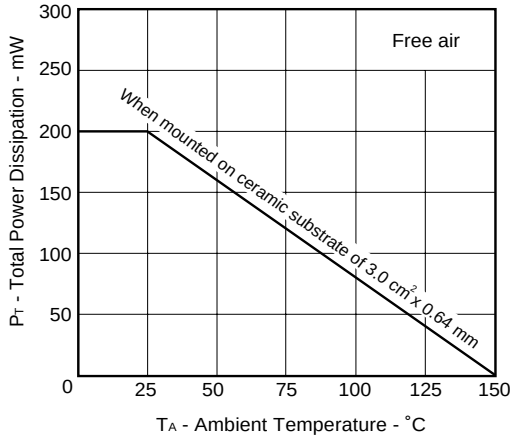
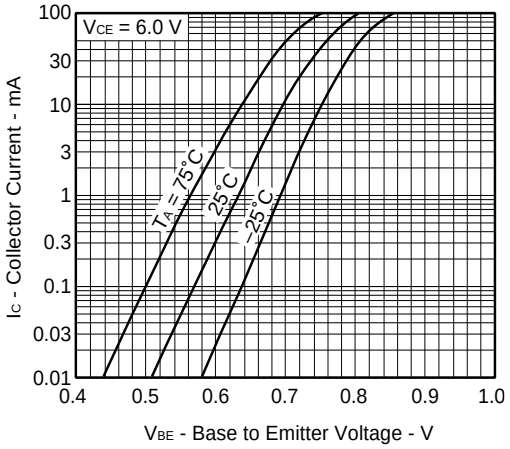
TYPICAL CHARACTERISTICS (T_A = 25°C)

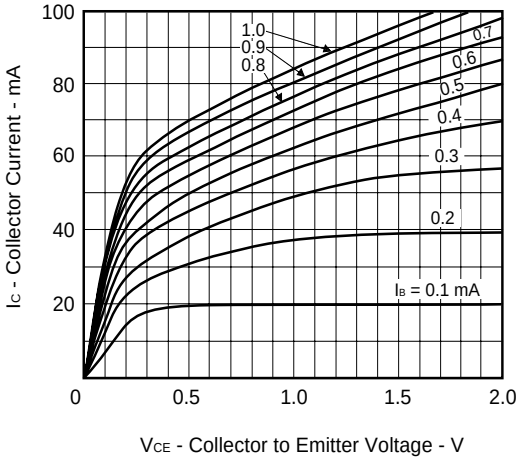
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



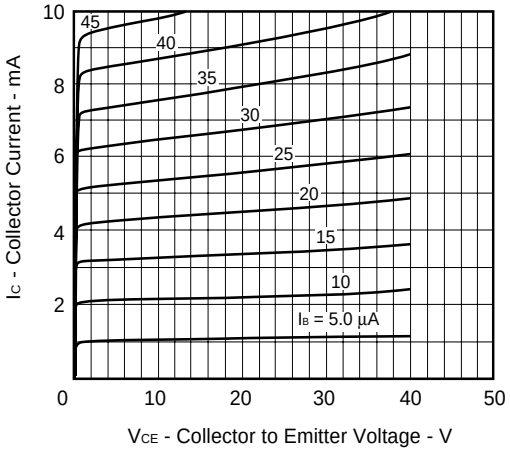
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



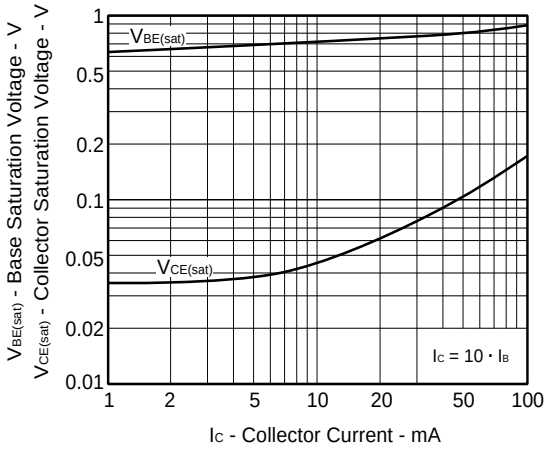
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



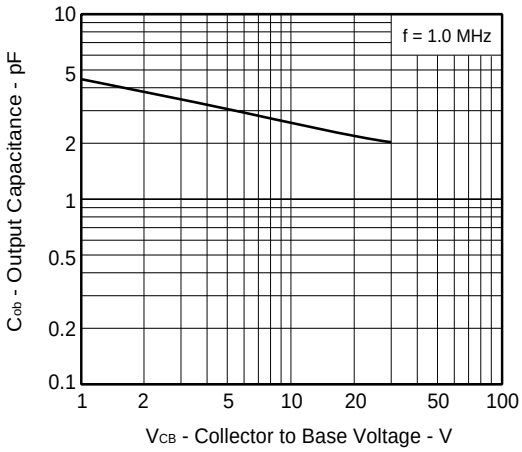
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



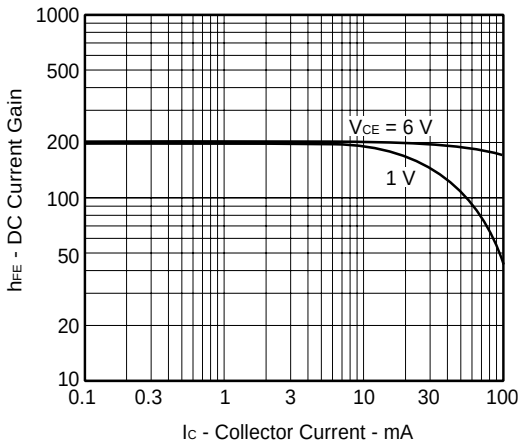
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



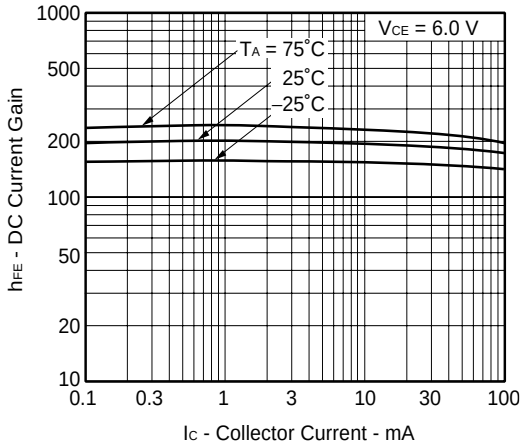
OUTPUT CAPACITANCE vs. REVERSE VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT



DC CURRENT GAIN vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT