

Transistors

Medium Power Transistor (50V,0.5A)

2SD1949/2SD1484K

● Features

- 1) High current. ($I_C=5A$)
- 2) Low saturation voltage, typically $V_{CE(sat)}=0.1V$ at $I_C / I_B=150mA / 15mA$.

● Absolute maximum ratings ($T_a=25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	0.5	A
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

● Electrical characteristics ($T_a=25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	$I_C=100\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E=100\mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=30V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB}=4V$
DC current transfer ratio	h_{FE}	120	—	390	—	$V_{CE}/I_C=3V/0.01A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	$I_C/I_B=150mA/15mA$
Transition frequency	f_T	—	250	—	MHz	$V_{CE}=5V, I_E=-20mA, f=100MHz$
Output capacitance	C_{ob}	—	6.5	—	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

● Packaging specifications and h_{FE}

Type	2SD1949	2SD1484K
Package	UMT3	SMT3
h_{FE}	QR	QR
Marking	Y*	Y*
Code	T106	T146
Basic ordering unit (pieces)	3000	3000

* Danotes h_{FE}

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●Electrical characteristic curves

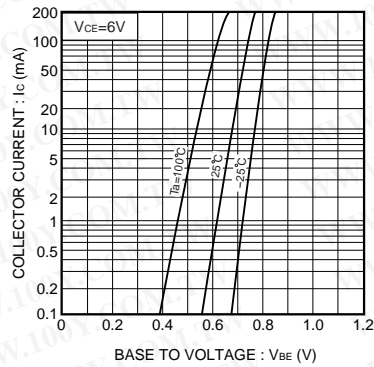


Fig.1 Ground emitter propagation characteristics

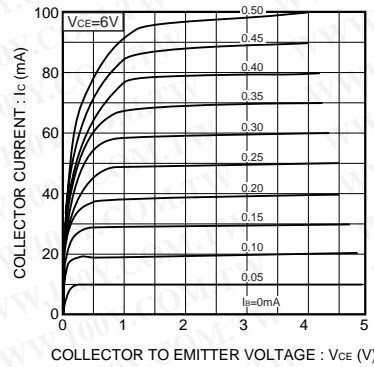


Fig.2 Ground emitter output characteristics

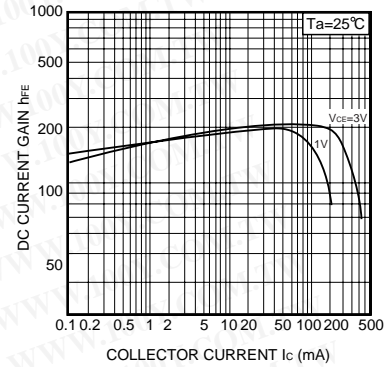


Fig.3 DC current gain vs. Collector current (I)

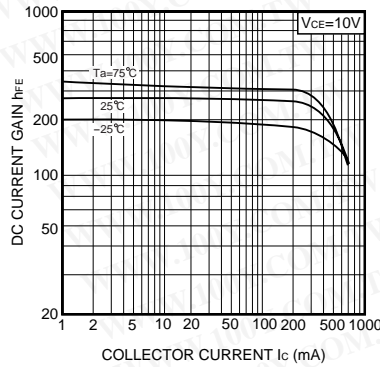


Fig.4 DC current gain vs. Collector current (II)

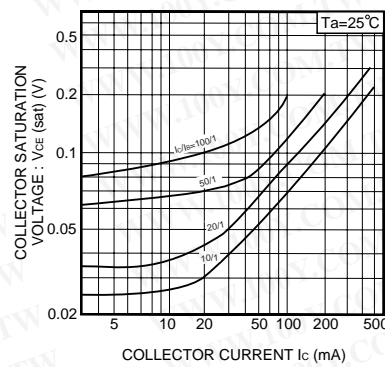


Fig.5 Collector-emitter saturation voltage vs. Collector current

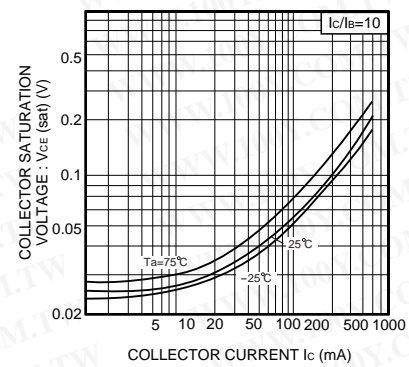


Fig.6 Collector-emitter saturation voltage vs. collector current

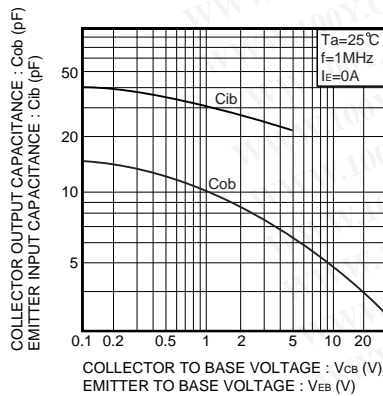


Fig.7 Input-and-output capacity vs.voltage characteristic

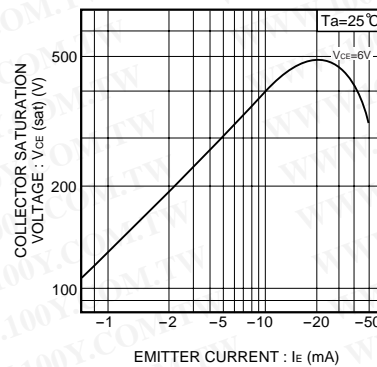


Fig.8 Transition frequency vs.emitter current