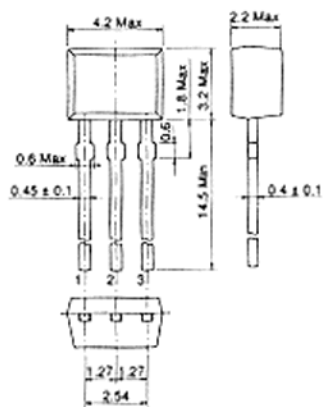


2SD1504

SILICON NPN EPITAXIAL

LOW FREQUENCY AMPLIFIER, MUTING

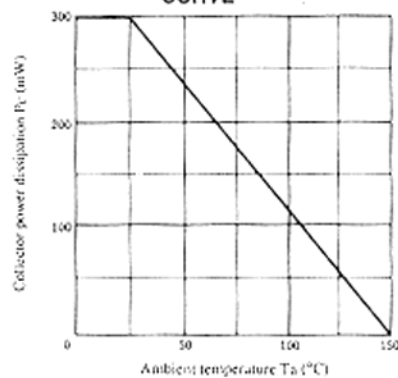


1. Emitter
 2. Collector
 3. Base
- (Dimensions in mm)

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

Item	Symbol	2SD1504	Unit
Collector to base voltage	V_{CB0}	30	V
Collector to emitter voltage	V_{CE0}	15	V
Emitter to base voltage	V_{EB0}	5	V
Collector current	I_C	0.5	A
Collector peak current	$i_{C(\text{peak})}$	1.0	A
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

MAXIMUM COLLECTOR DISSIPATION CURVE



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

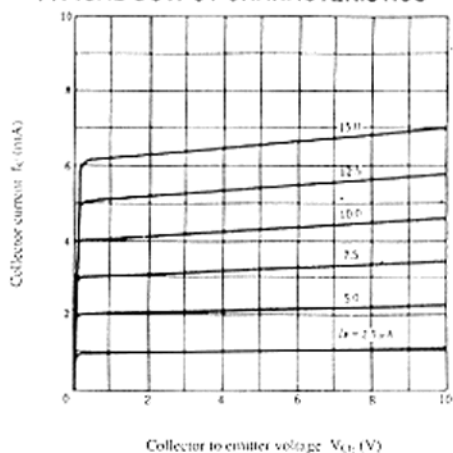
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CB0}$	$I_C = 10\mu\text{A}, I_E = 0$	30	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CE0}$	$I_C = 1\text{mA}, R_{BE} = \infty$	15	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EB0}$	$I_E = 10\mu\text{A}, I_C = 0$	5	—	—	V
Collector cutoff current	I_{CB0}	$V_{CB} = 20\text{V}, I_E = 0$	—	—	1.0	μA
DC current transfer ratio	h_{FE}^*	$V_{CE} = 1\text{V}, I_C = 150\text{mA}^{**}$	250	—	1200	
Base to emitter voltage	V_{BE}	$V_{CE} = 1\text{V}, I_C = 150\text{mA}$	—	0.65	—	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}^{**}$	—	0.15	0.5	V
	$V_{CE(sat)}$	$I_C = 30\text{mA}, I_B = 3\text{mA}$	—	0.018	—	V
Gain bandwidth product	f_T	$V_{CE} = 1\text{V}, I_C = 50\text{mA}$	—	300	—	MHz
On resistance	r_{on}	$I_B = 2\text{mA}$	—	0.5	—	Ω

* The 2SD1504 is grouped by h_{FE} as follows.

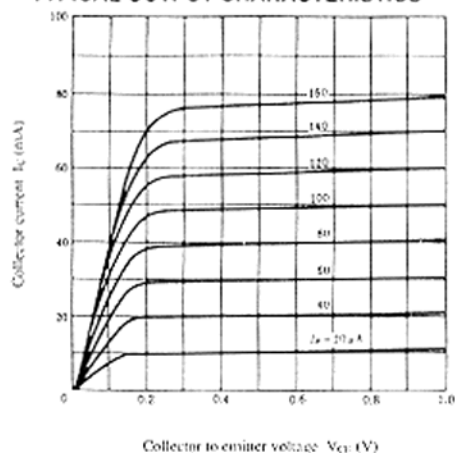
** Pulse Test

D	E	F
250 to 500	400 to 600	600 to 1200

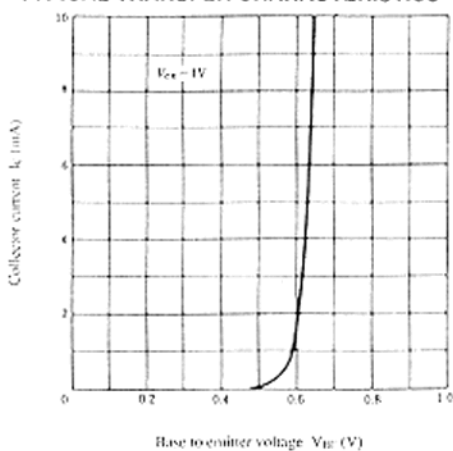
TYPICAL OUTPUT CHARACTERISTICS



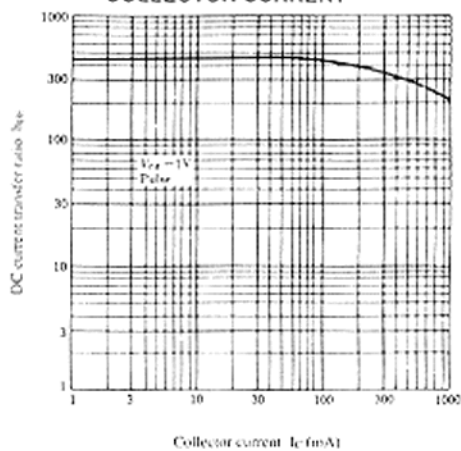
TYPICAL OUTPUT CHARACTERISTICS



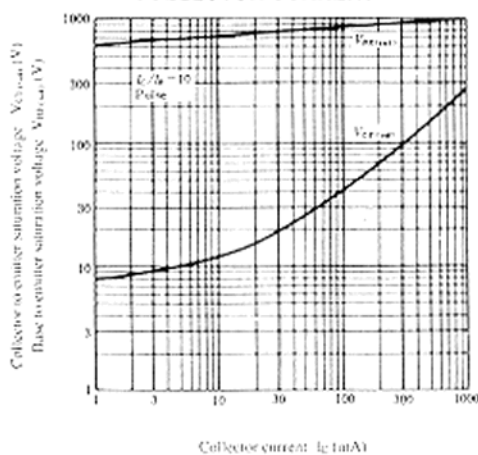
TYPICAL TRANSFER CHARACTERISTICS



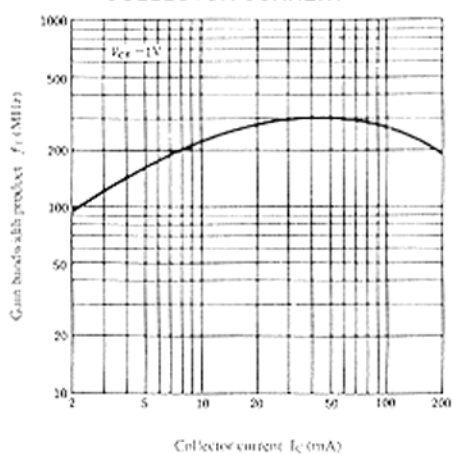
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



SATURATION VOLTAGE VS. COLLECTOR CURRENT

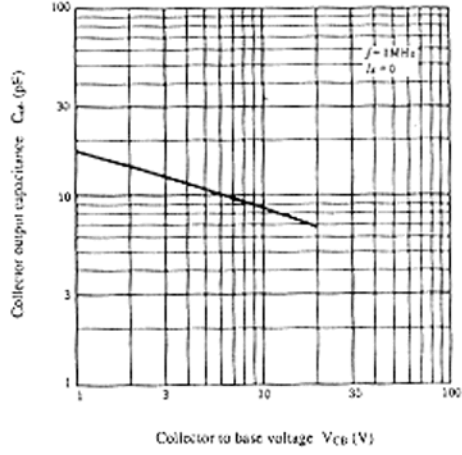


GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



2SD1504

COLLECTOR OUTPUT CAPACITANCE VS.
COLLECTOR TO BASE VOLTAGE



ON RESISTANCE VS. BASE CURRENT

