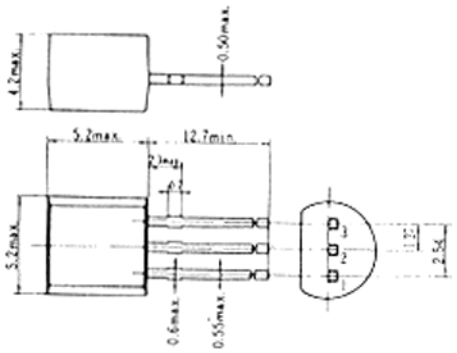
HITACHI

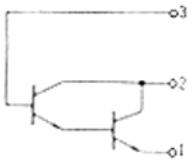
2SC1472 (K)

SILICON NPN EPITAXIAL PLANAR

HIGH GAIN AMPLIFIER



(JEDEC TO-92)



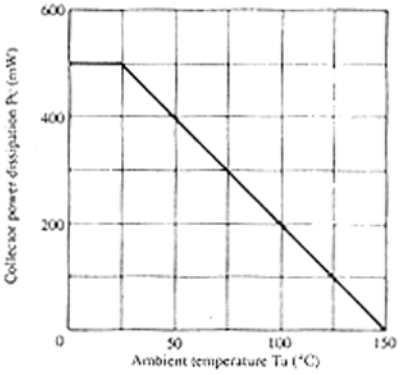
1. Emitter
2. Collector
3. Base

(Dimensions in mm)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SC1472 (K)	Unit
Collector to base voltage	V_{CBO}	40	V
Collector to emitter voltage	V_{CEO}	30	V
Emitter to base voltage	V_{EBO}	10	V
Collector current	I_C	300	mA
Collector peak current	$I_{C(peak)}$	500	mA
Collector power dissipation	P_C	500	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

MAXIMUM COLLECTOR DISSIPATION CURVE



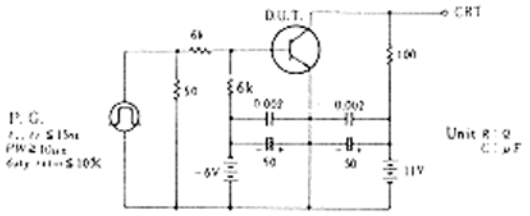
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	30	—	—	V
Collector cutoff current	I_{CBO}	V_{CB} =30V, I_E = 0	—	—	100	nA
Emitter cutoff current	I_{EBO}	V_{EB} =10V, I_C = 0	—	—	100	nA
DC current transfer ratio	h_{FE1}*	I_C = 10mA, V_{CE} = 5V	2,000	—	100,000	
	h_{FE2}*	I_C = 100mA, V_{CE} = 5V (Pulse Test)	3,000	—	—	
	h_{FE3}*	I_C = 400mA, V_{CE} = 5V (Pulse Test)	3,000	—	—	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 0.1mA	—	—	1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 100mA, I_B = 0.1mA	—	—	2.0	V
Gain bandwidth product	f_T	I_C = 10mA, V_{CE} = 5V	50	—	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10V, f = 1MHz	—	—	10	pF
Turn on time	t_{on}	V_{CC} = 11V	—	60	—	ns
Turn off time	t_{off}	I_C = 100I_{B1} = −100I_{B2} = −100mA	—	800	—	ns
Storage time	t_{stg}		—	350	—	ns

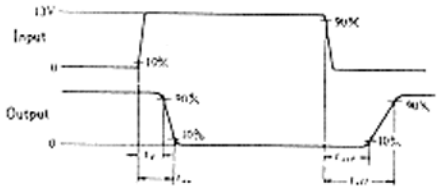
* The 2SC1472 (K) is grouped by h_{FE} as follows.

	A	B
h_{FE1}	2,000 to 100,000	5,000 to 100,000
h_{FE2}	3,000 min	10,000 min
h_{FE3}	3,000 min	10,000 min

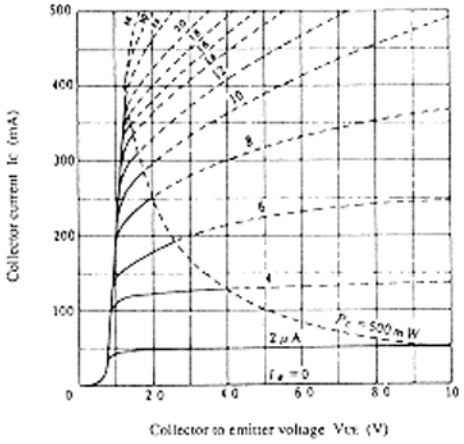
SWITCHING TIME TEST CIRCUIT



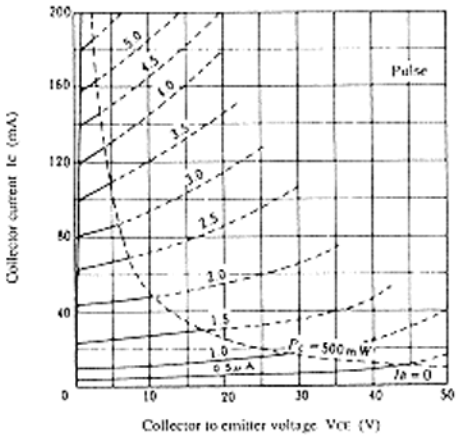
RESPONSE WAVEFORM



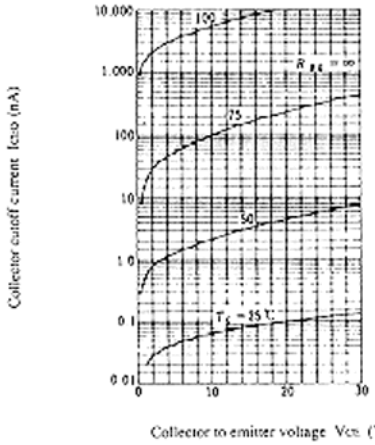
TYPICAL OUTPUT CHARACTERISTICS



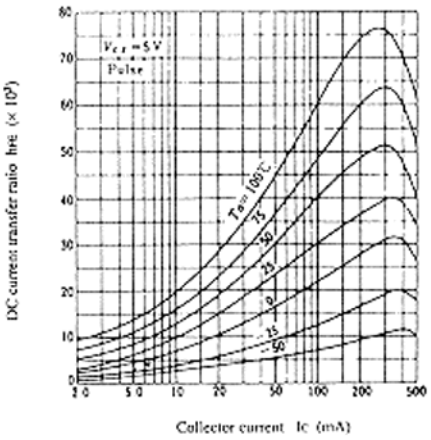
TYPICAL OUTPUT CHARACTERISTICS



COLLECTOR CUTOFF CURRENT VS. COLLECTOR TO EMITTER VOLTAGE

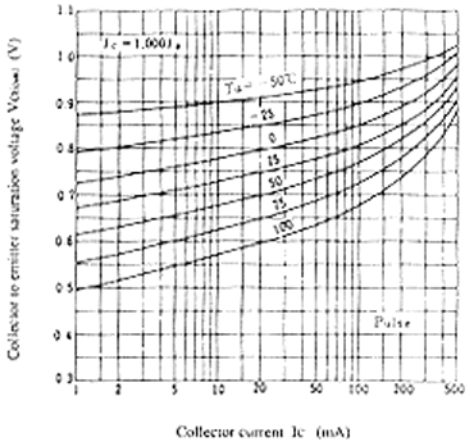


DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT

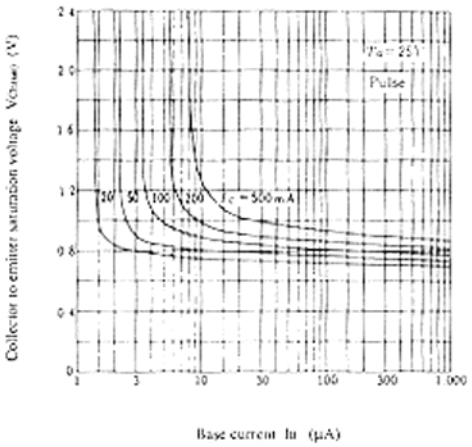


2SC1472(K)

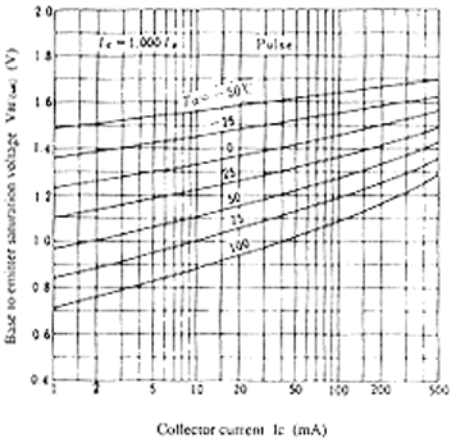
COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



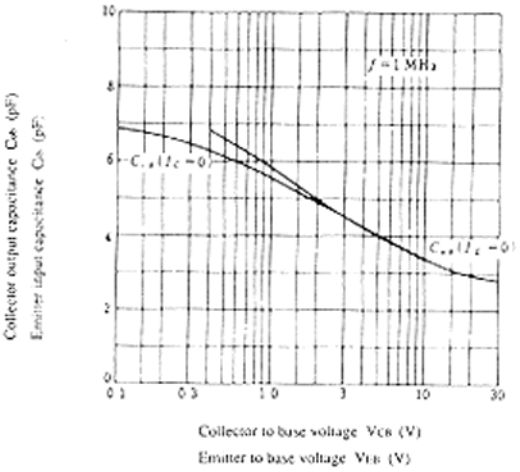
COLLECTOR TO EMITTER SATURATION VOLTAGE VS. BASE CURRENT



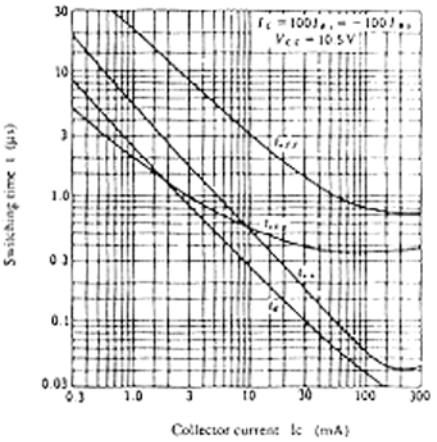
BASE TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



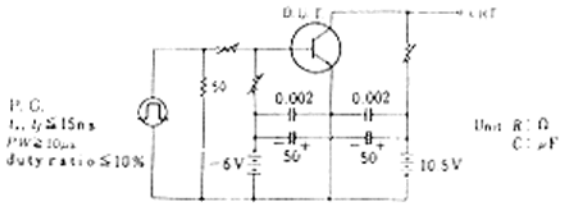
INPUT AND OUTPUT CAPACITANCE VS. VOLTAGE



SWITCHING TIME VS. COLLECTOR CURRENT



SWITCHING TIME TEST CIRCUIT



RESPONSE WAVEFORM