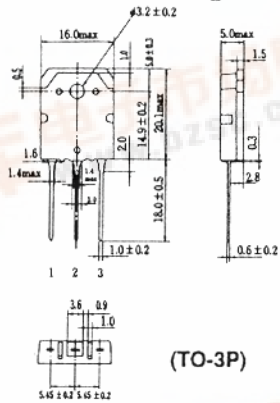


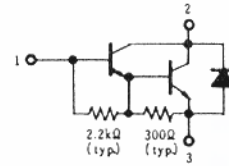
# 2SD1435(K)

SILICON NPN EPITAXIAL

LOW FREQUENCY POWER AMPLIFIER  
HIGH CURRENT SWITCHING  
COMPLEMENTARY PAIR WITH 2SB1031(K)



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

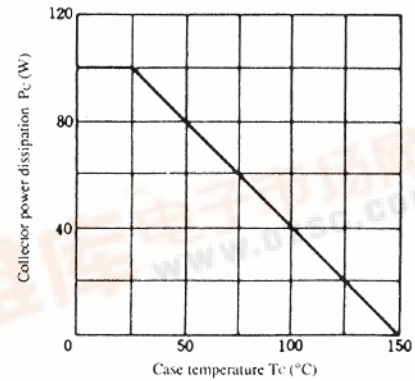


## ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD1435(K)	Unit
Collector to base voltage	V <sub>CB0</sub>	100	V
Collector to emitter voltage	V <sub>CEO</sub>	100	V
Emitter to base voltage	V <sub>EBO</sub>	7	V
Collector current	I <sub>C</sub>	15	A
Collector peak current	i <sub>C(peak)</sub>	20	A
Base current	I <sub>B</sub>	3	A
Collector power dissipation	P <sub>C*</sub>	100	W
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>sig</sub>	-55 to +150	°C

\* Value at T<sub>c</sub> = 25°C.

## MAXIMUM COLLECTOR DISSIPATION CURVE



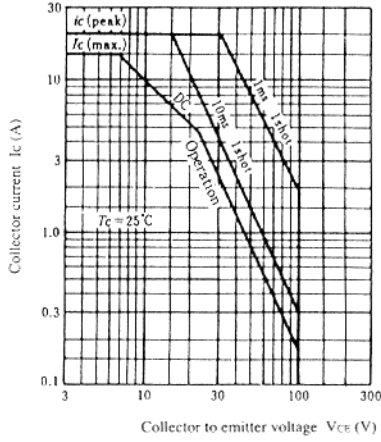
## ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	100	—	—	V
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 50mA, I <sub>C</sub> = 0	7	—	—	V
Collector to emitter sustain voltage	V <sub>CEO(sus)</sub>	I <sub>C</sub> = 200mA, R <sub>BE</sub> = ∞*	100	—	—	V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 100V, I <sub>E</sub> = 0	—	—	100	μA
	I <sub>CEO</sub>	V <sub>CE</sub> = 80V, R <sub>BE</sub> = ∞	—	—	1.0	μA
DC current transfer ratio	h <sub>FE</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 8A*	1000	—	20000	
Collector to emitter saturation voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> = 8A, I <sub>B</sub> = 16mA*	—	—	2.0	V
Base to emitter saturation voltage	V <sub>BE(sat)1</sub>		—	—	2.5	V
Collector to emitter saturation voltage	V <sub>CE(sat)2</sub>	I <sub>C</sub> = 15A, I <sub>B</sub> = 150mA*	—	—	3.0	V
Base to emitter saturation voltage	V <sub>BE(sat)2</sub>		—	—	3.5	V
Turn on time	t <sub>on</sub>	I <sub>C</sub> = 8A, I <sub>B1</sub> = -I <sub>B2</sub> = 16mA	—	2	—	μs
Turn off time	t <sub>off</sub>		—	8	—	μs

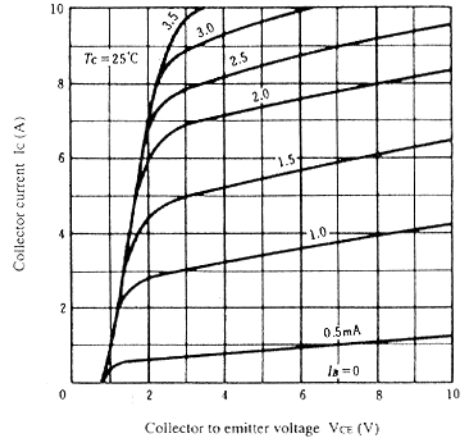
\* Pulse Test.

## 2SD1435 (K)

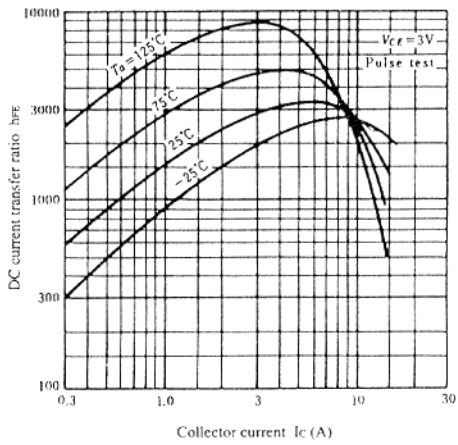
AREA OF SAFE OPERATION



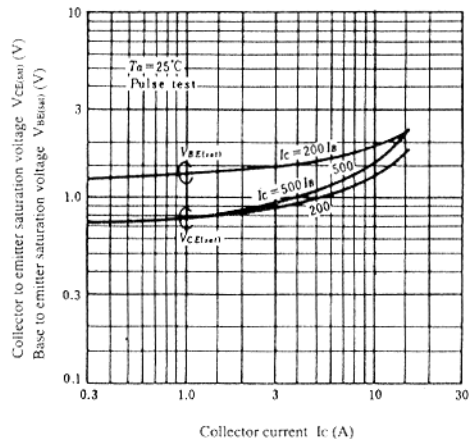
TYPICAL OUTPUT CHARACTERISTICS



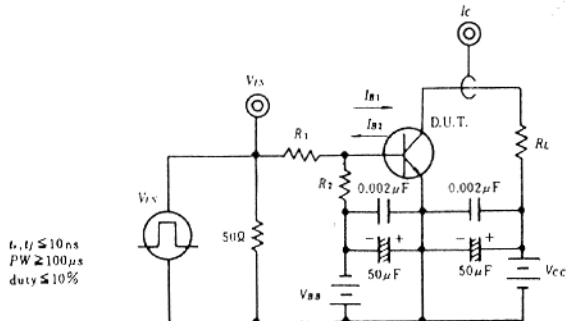
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



SATURATION VOLTAGE VS. COLLECTOR CURRENT



SWITCHING TIME TEST CIRCUIT



$t_r, t_f \leq 10\text{ns}$   
 $PW \geq 100\mu\text{s}$   
 duty  $\leq 10\%$

$I_c$	$I_{B1}$	$I_{B2}$	$V_{CC}$	$V_{BE}$	$V_{ES}$	$R_L$	$R_1$	$R_2$
A	mA	mA	V	V	V	$\Omega$	$\Omega$	$\Omega$
R	16	-16	20	-8	10	2	400	1k

RESPONSE WAVEFORM

