



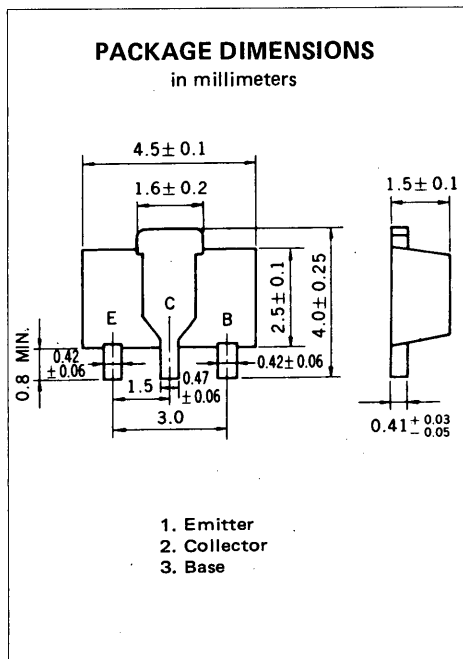
SILICON TRANSISTOR

2SA1463

HIGH SPEED SWITCHING

PNP SILICON EPITAXIAL TRANSISTOR

POWER MINI MOLD



DESCRIPTION The 2SA1463 is designed for power amplifier and high speed switching applications.

FEATURES

- High speed, high voltage switching.
- Low Collector Saturation Voltage.
- Complementary to the NEC 2SC3736 NPN transistor.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CB0}	-60	V
Collector to Emitter Voltage	V_{CEO}	-45	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current (DC)	I_C	-1.0	A
Collector Current (Pulse)*	I_C	-2.0	A

Maximum Power Dissipation

Total Power Dissipation at 25°C Ambient Temperature**	P_T	2.0	W
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Maximum Temperatures

Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10$ ms, Duty Cycle $\leq 50\%$

** When mounted on ceramic substrate of $16\text{ cm}^2 \times 0.7\text{ mm}$

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

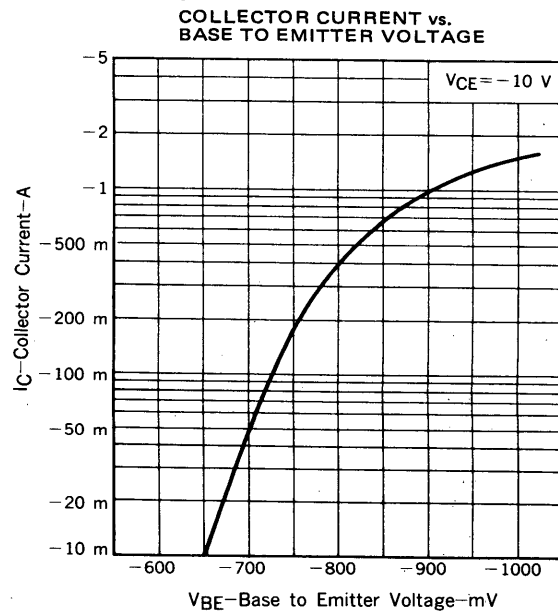
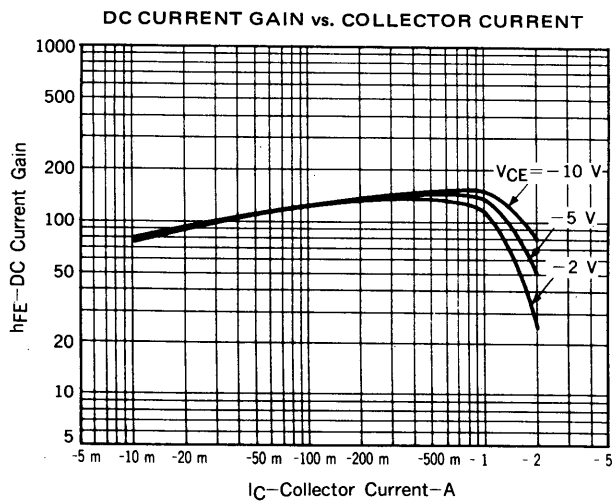
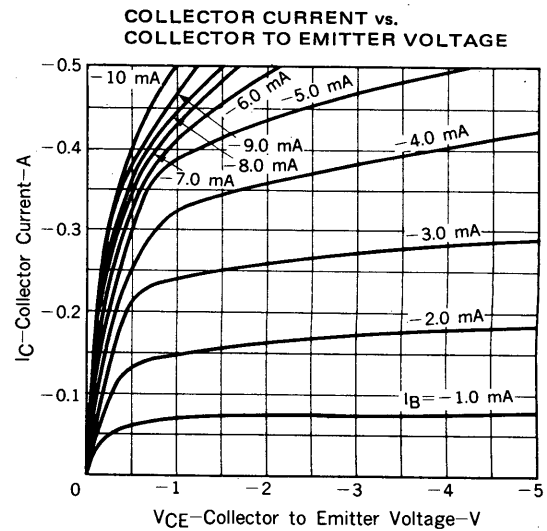
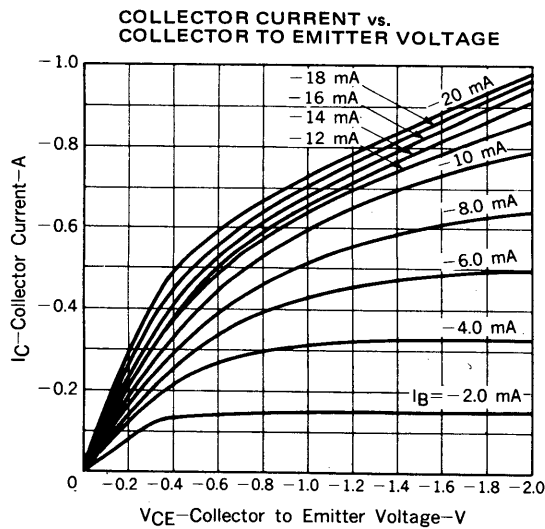
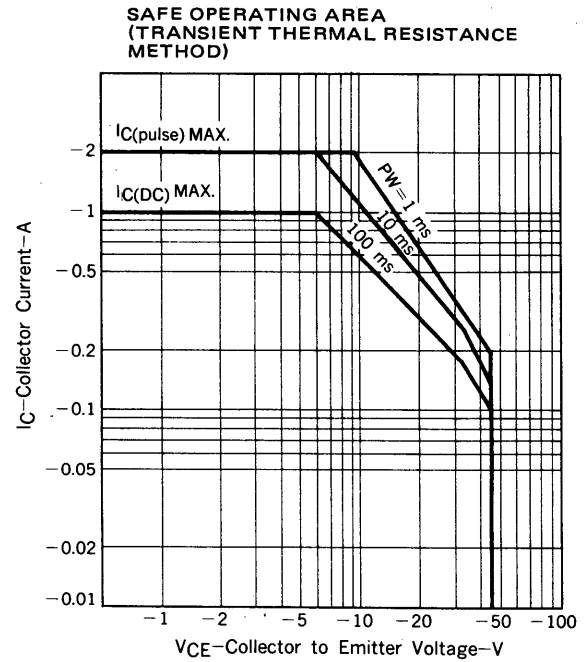
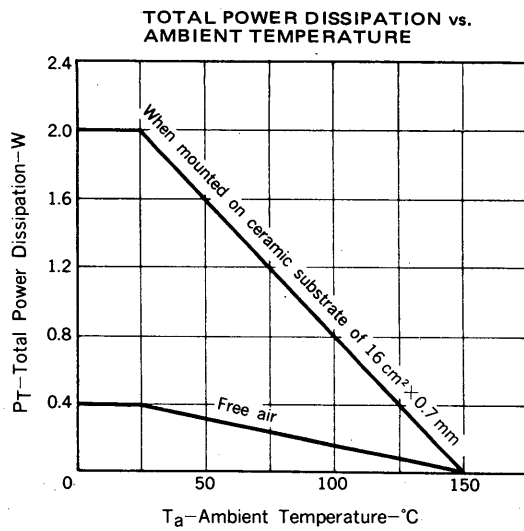
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CES}			-0.5	μA	$V_{CE} = -45\text{ V}, R_{BE} = 0$
Emitter Cutoff Current	I_{EBO}			-0.5	μA	$V_{EB} = -4.0\text{ V}, I_C = 0$
DC Current Gain	h_{FE1}^{***}	60		200		$V_{CE} = -10\text{ V}, I_C = -50\text{ mA}$
DC Current Gain	h_{FE2}^{***}	60				$V_{CE} = -10\text{ V}, I_C = -500\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^{***}$		-0.26	-0.6	V	$I_C = -500\text{ mA}, I_B = -50\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^{***}$		-0.98	-1.2	V	
Gain Bandwidth Product	f_T	300	400		MHz	$V_{CE} = -10\text{ V}, I_E = 100\text{ mA}$
Output Capacitance	C_{ob}		11	25	pF	$V_{CB} = -10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$
Turn-on Time	t_{on}		25	40	ns	$I_C = -500\text{ mA}$ $I_{B1} = -I_{B2} = -50\text{ mA}$
Storage Time	t_{stg}		46	70	ns	
Turn-off Time	t_{off}		62	100	ns	

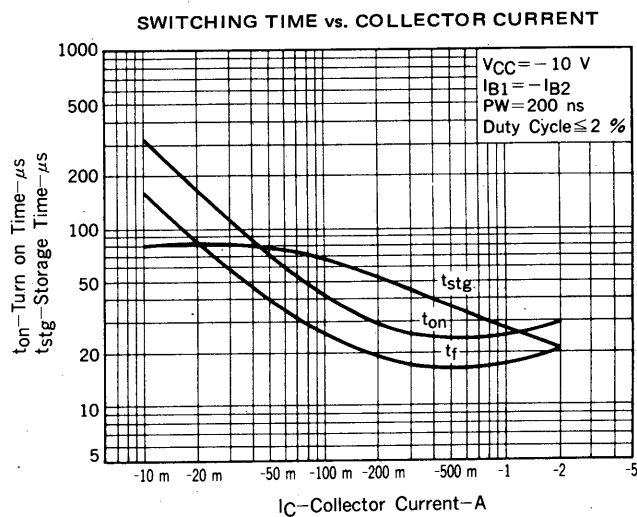
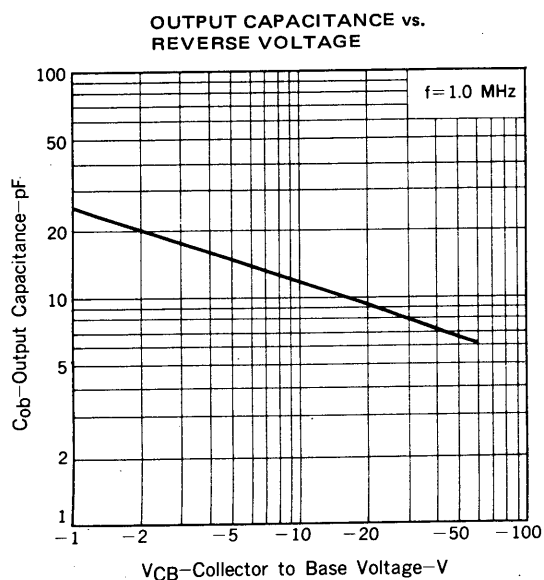
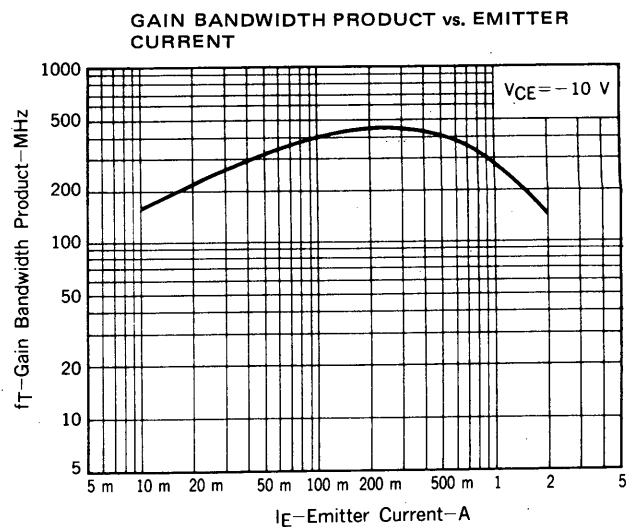
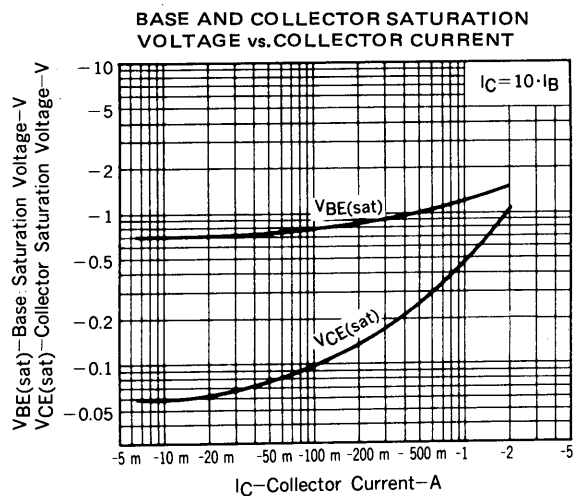
*** Pulsed: $PW \leq 350\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} Classification

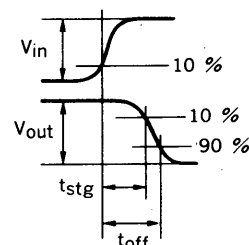
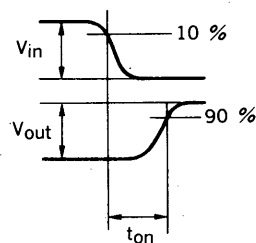
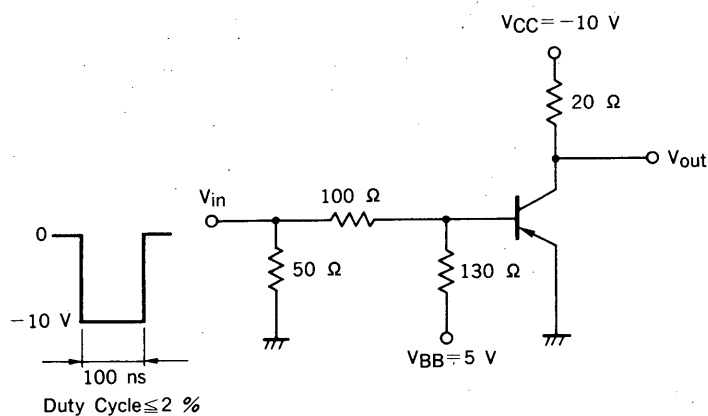
MARKING	IL	IK
h_{FE}	60 to 120	100 to 200

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





SWITCHING TIME TEST CIRCUIT



REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system.	TEI-1202
Quality grade on NEC semiconductor devices.	IEI-1209
Semiconductor device mounting technology manual.	IEI-1207
Semiconductor device package manual.	IEI-1213
Guide to quality assurance for semiconductor devices.	MEI-1202
Semiconductor selection guide.	MF-1134

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