



No.2015A

2 S C 3 8 0 8

NPN Epitaxial Planar Silicon Transistor  
 HIGH h<sub>FE</sub>, LOW FREQUENCY  
 GENERAL-PURPOSE AMP APPLICATIONS

**Applications**

- Low frequency general-purpose amplifiers, drivers

**Features**

- Large current capacity (I<sub>C</sub>=2A)
- Adoption of MBIT process
- High DC current gain (h<sub>FE</sub>=800 to 3200)
- Low collector-to-emitter saturation voltage (V<sub>CE(sat)</sub> ≤ 0.5V)
- High V<sub>EBO</sub> (V<sub>EBO</sub> ≥ 15V)

**Absolute Maximum Ratings at Ta=25°C**

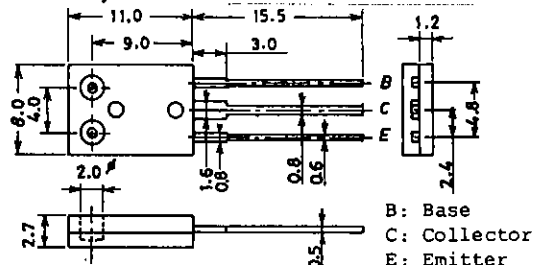
			unit
Collector to Base Voltage	V <sub>CB0</sub>	80	V
Collector to Emitter Voltage	V <sub>CEO</sub>	60	V
Emitter to Base Voltage	V <sub>EBO</sub>	15	V
Collector Current	I <sub>C</sub>	2	A
Peak Collector Current	i <sub>cp</sub>	4	A
Collector Dissipation	P <sub>c</sub>	1.2	W
	T <sub>c</sub> =25°C	15	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

**Electrical Characteristics at Ta=25°C**

		min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub> V <sub>CB</sub> =50V, I <sub>E</sub> =0			1	μA
Emitter Cutoff Current	I <sub>EBO</sub> V <sub>EB</sub> =10V, I <sub>C</sub> =0			1	μA
DC Current Gain	h <sub>FE</sub> (1) V <sub>CE</sub> =5V, I <sub>C</sub> =500mA	800	1500	3200	
	h <sub>FE</sub> (2) V <sub>CE</sub> =5V, I <sub>C</sub> =1A	600			
Gain-Bandwidth Product	f <sub>T</sub> V <sub>CE</sub> =10V, I <sub>C</sub> =50mA		170		MHz
Output Capacitance	c <sub>ob</sub> V <sub>CE</sub> =10V, f <sub>C</sub> =1MHz		24		pF
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub> I <sub>C</sub> =1A, I <sub>B</sub> =20mA		0.2	0.5	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub> I <sub>C</sub> =1A, I <sub>B</sub> =20mA		0.87	1.2	V
Collector to Base Breakdown Voltage	V <sub>(BR)CBO</sub> I <sub>C</sub> =10μA, I <sub>E</sub> =0	80			V

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**Package Dimensions 2043A**  
(unit: mm)

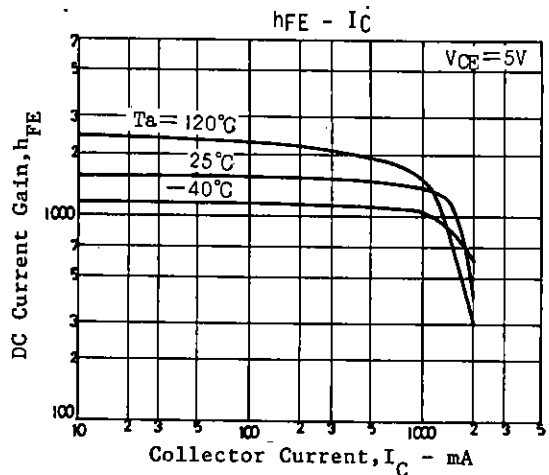
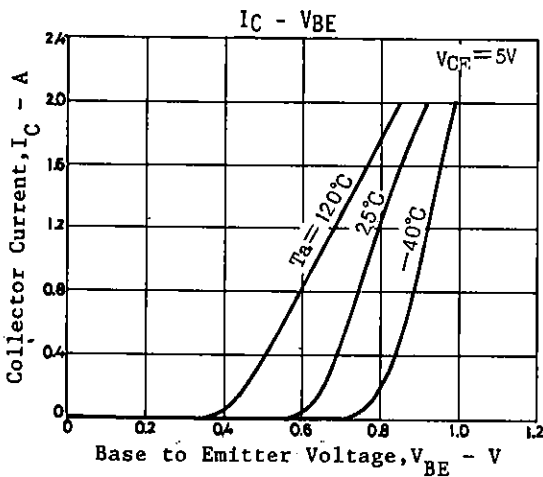
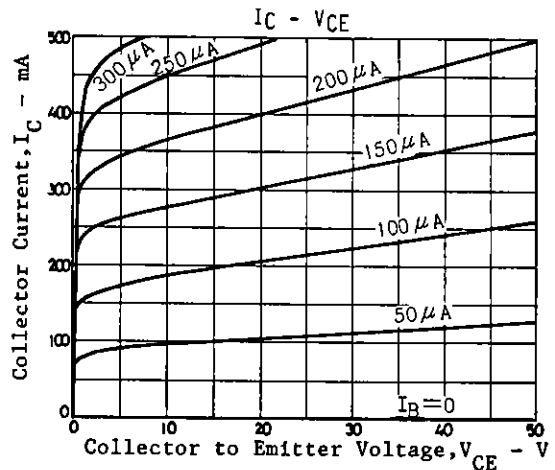
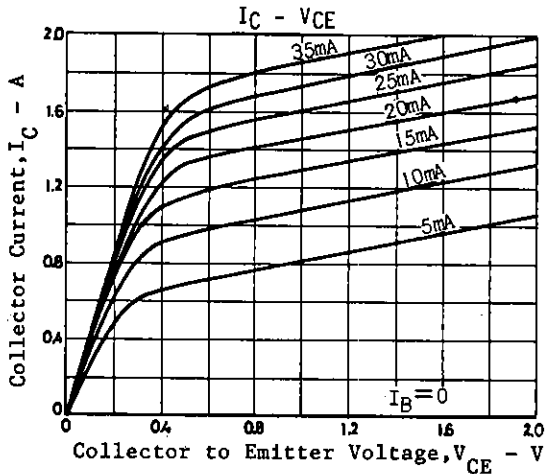
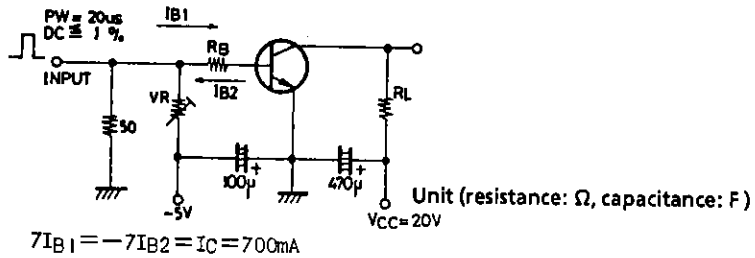


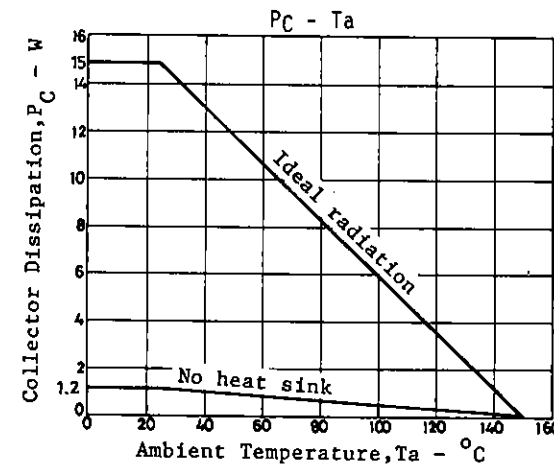
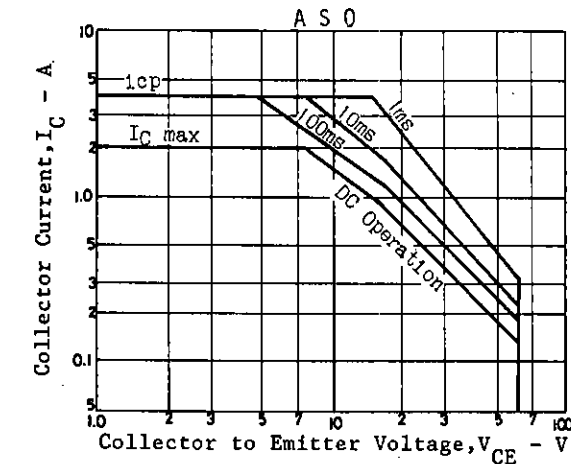
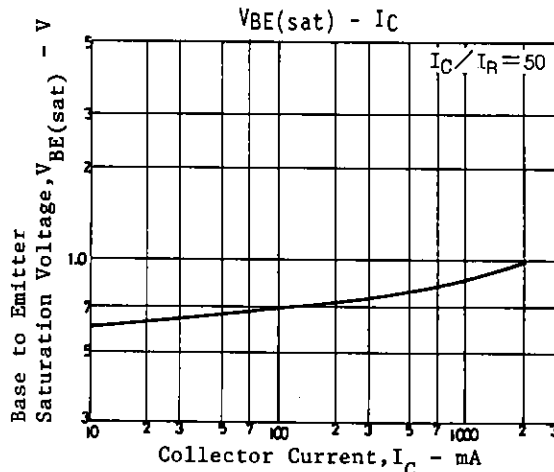
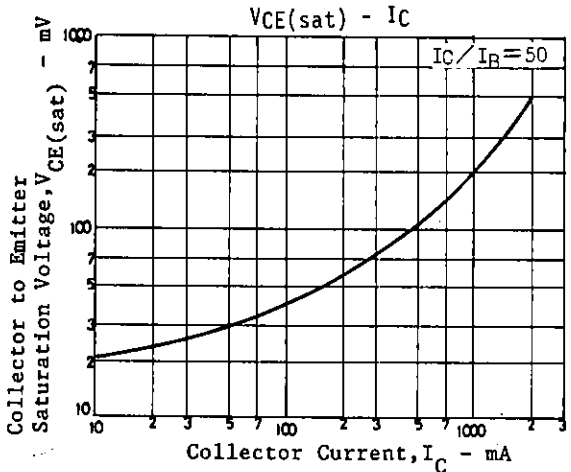
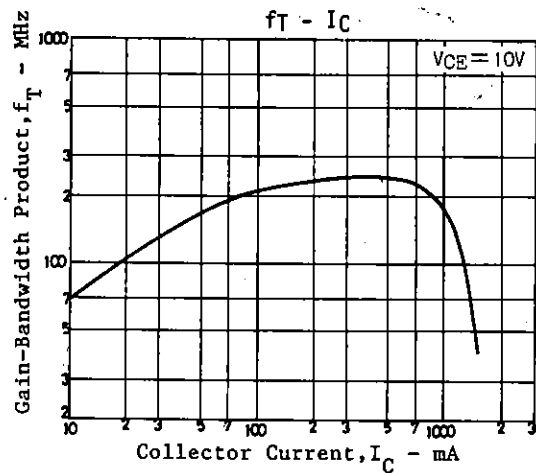
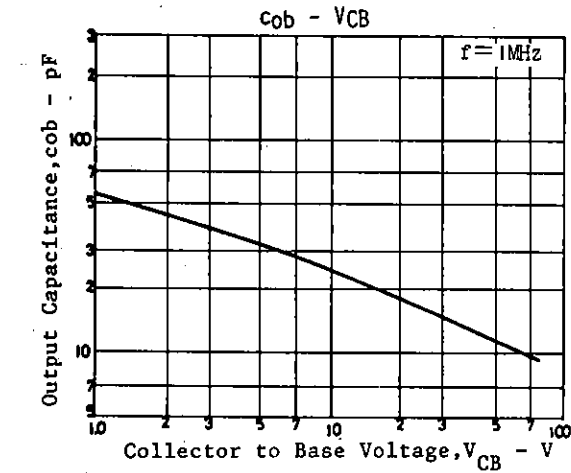
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			min	typ	max	unit
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	60			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	15			V
Turn-on Time	$t_{on}$	See specified Test Circuit.		0.23		$\mu s$
Storage Temperature	$t_{stg}$	"		2.7		$\mu s$
Fall Time	$t_f$	"		0.75		$\mu s$

Switching Time Test Circuit





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