

SANYO	No.2042A	2SD1685
	NPN Epitaxial Planar Type Silicon Transistor HIGH-CURRENT SWITCHING APPLICATIONS	

Applications

- . Strobes, voltage regulators, relay drivers, lamp drivers

Features

- . Low saturation voltage
- . Large current capacity
- . Fast switching time
- . No insulator required when mounting because the leadframe of the chip is covered with plastic

Absolute Maximum Ratings at Ta=25°C

			unit
Collector-to-Base Voltage	V _{CBO}	60	V
Collector-to-Emitter Voltage	V _{CEO}	20	V
Emitter-to-Base Voltage	V _{EBO}	6	V
Collector Current	I _C	5	A
Peak Collector Current	i _{cp}	8	A
Collector Dissipation	P _C	1.5	W
		Tc=25°C	
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

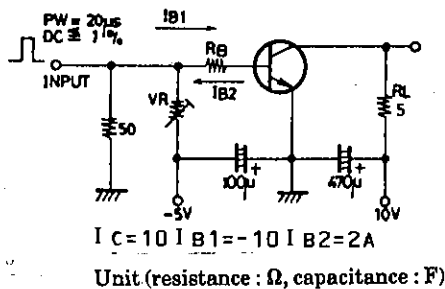
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Collector Cutoff Current	I _{CBO}	V _{CB} =50V, I _E =0			100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =5V, I _C =0			100	nA
DC Current Gain	h _{FE} (1)	V _{CE} =2V, I _C =500mA	120*		560*	
	h _{FE} (2)	V _{CE} =2V, I _C =3A	95			
Gain-Bandwidth Product	f _T	V _{CE} =10V, I _C =50mA		120		MHz
Output Capacitance	c _{ob}	V _{CB} =10V, f=1MHz		45		pF
C-E Saturation Voltage	V _{CE(sat)}	I _C =3A, I _B =60mA		220	500	mV
B-E Saturation Voltage	V _{BE(sat)}	I _C =3A, I _B =60mA			1.5	V
C-B Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	60			V
C-E Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, R _{BE} =∞	20			V
E-B Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	6			V
Turn-on Time	t _{on}	See specified Test Circuit.		30		ns
Storage Time	t _{stg}	"		300		ns
Fall Time	t _f	"		40		ns

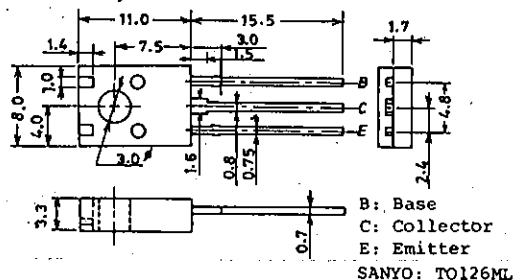
*: The 2SD1685 is classified by 500mA h_{FE} as follows:

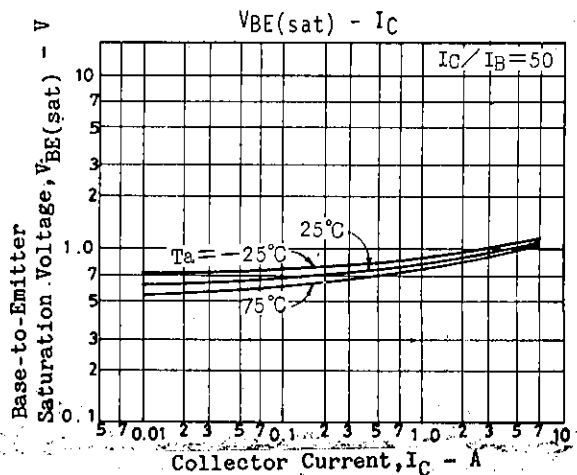
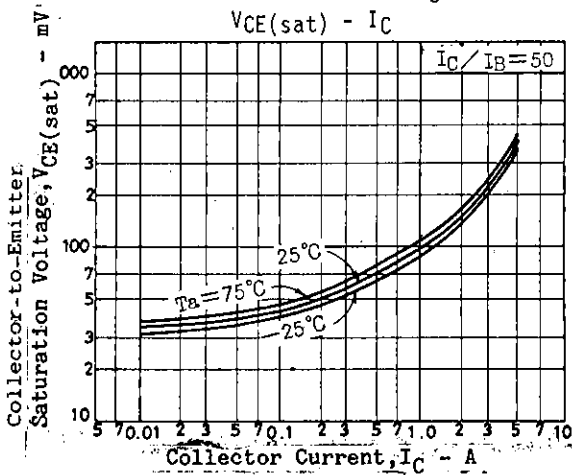
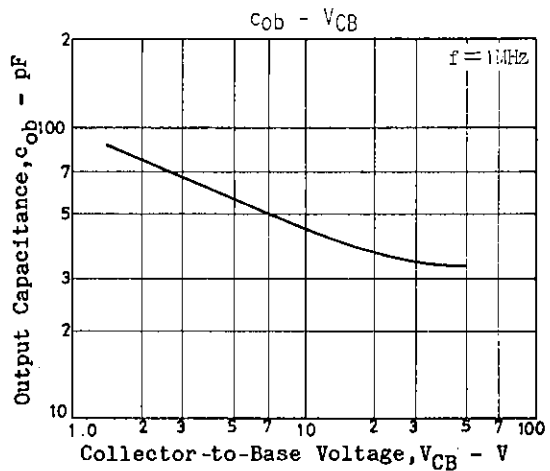
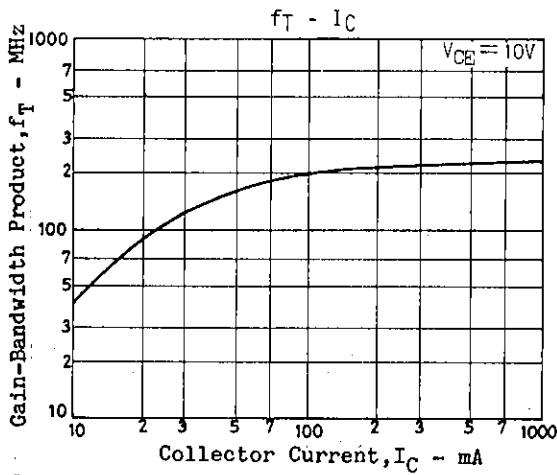
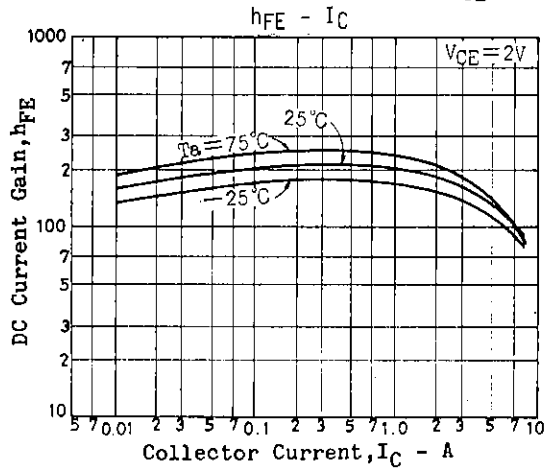
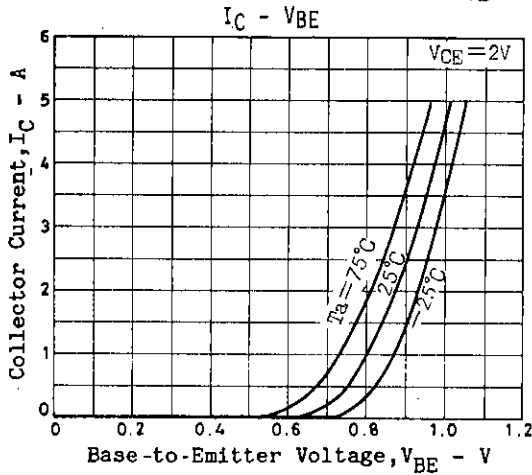
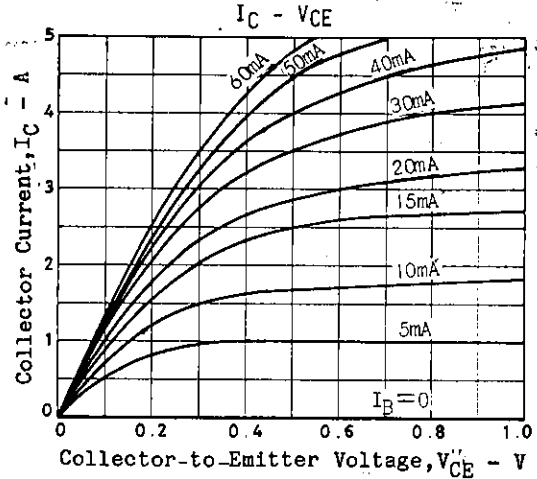
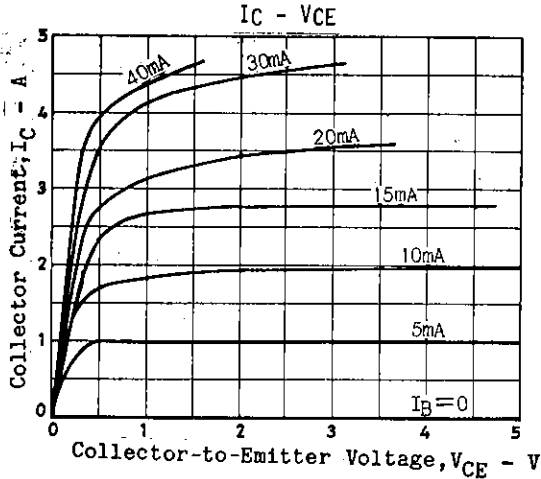
120 E 200	160 F 320	280 G 560
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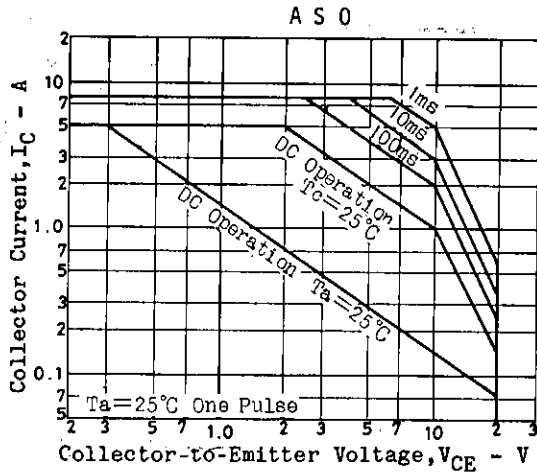
Switching Time Test Circuit



Package Dimensions 2042A (unit:mm)







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