

## GISD1804 NPN EPITAXIAL PLANAR SILICON TRANSISTOR

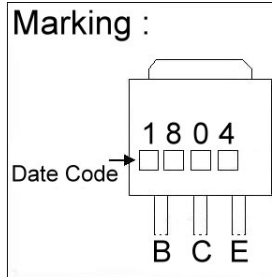
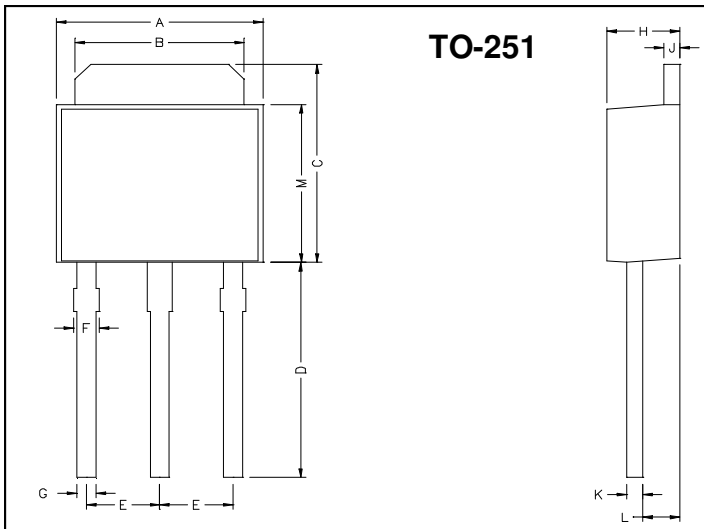
### Description

The GISD1804 applies to relay drivers, high-speed inverters, converters, and other general high-current switching applications.

### Features

- \*Low collector-to-emitter saturation voltage
- \*High current and high  $f_T$
- \*Excellent linearity of  $h_{FE}$
- \*Fast switching time

### Package Dimensions



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.40	6.80	G	0.50	0.70
B	5.20	5.50	H	2.20	2.40
C	6.80	7.20	J	0.45	0.55
D	7.20	7.80	K	0.45	0.60
E	2.30 REF.		L	0.90	1.50
F	0.60	0.90	M	5.40	5.80

### Absolute Maximum Ratings (Ta = 25°C, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Junction Temperature	Tj	+150	°C
Storage Temperature	Tstg	-55 ~ +150	°C
Collector to Base Voltage	VCBO	60	V
Collector to Emitter Voltage	VCEO	50	V
Emitter to Base Voltage	VEBO	6	V
Collector Current(DC)	IC	8	A
Collector Current(Pulse)	IC	12	A
Collector Dissipation	PD	1	W
	Tc=25°C	20	W

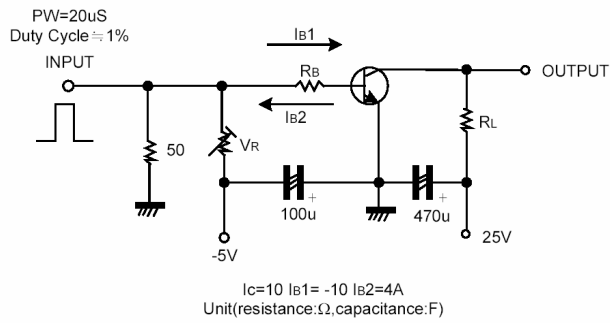
### Electrical Characteristics (Ta = 25°C unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
V(BR)CBO	60	-	-	V	IC=10uA, IE=0
V(BR)CEO	50	-	-	V	IC=1mA, RBE=∞
V(BR)EBO	6	-	-	V	IE=10uA, IC=0
ICBO	-	-	1	uA	VCB=40V, IE=0
IEBO	-	-	1	uA	VEB=4V, IC=0
VCE(sat)	-	0.2	0.4	V	IC=4A, IB=0.2A
VBE(sat)	-	0.95	1.3	V	IC=4A, IB=0.2A
hFE1	70	-	400		VCE=2V, IC=0.5A
hFE2	35	-	-		VCE=2V, IC=6A
fT	-	180	-	MHZ	VCE=5V, IC=1A
tstg	-	500	-	ns	See test circuit
tf	-	20	-	ns	See test circuit
Cob	-	65	-	pF	VCB=10V, f=1MHz

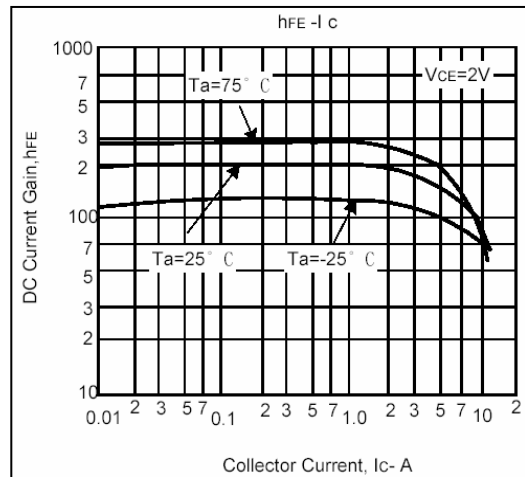
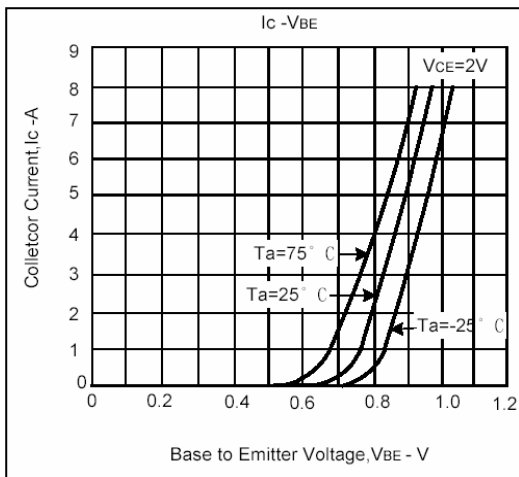
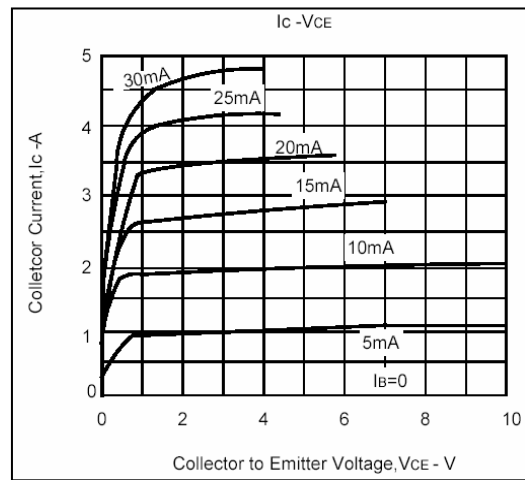
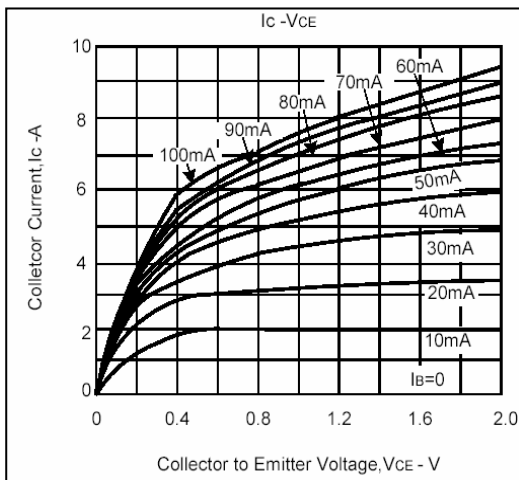
## Classification Of hFE1

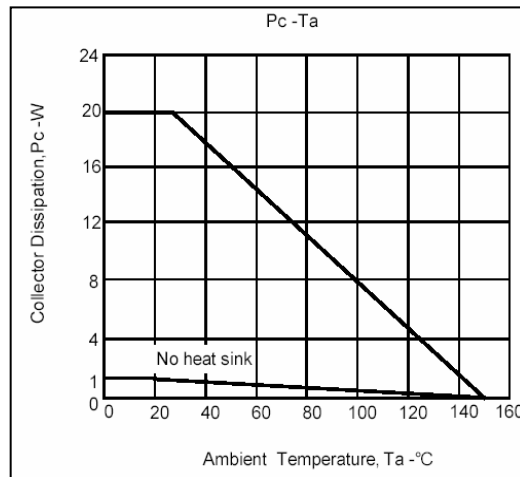
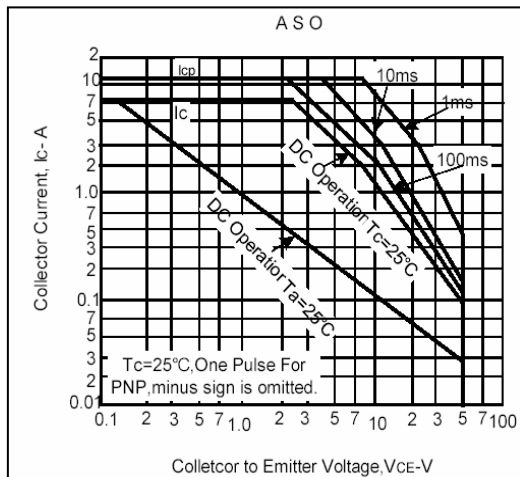
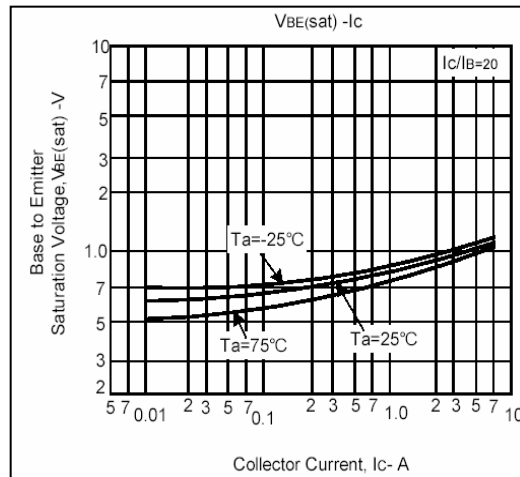
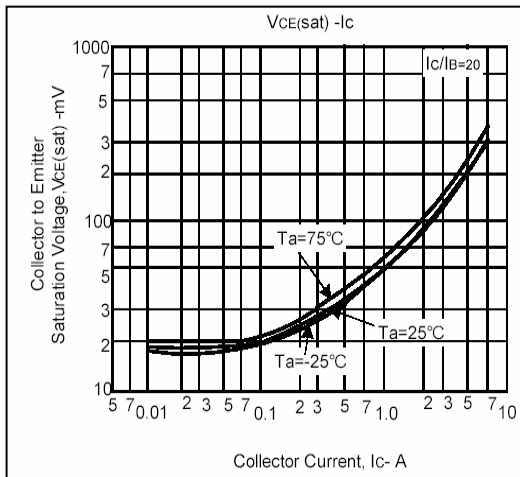
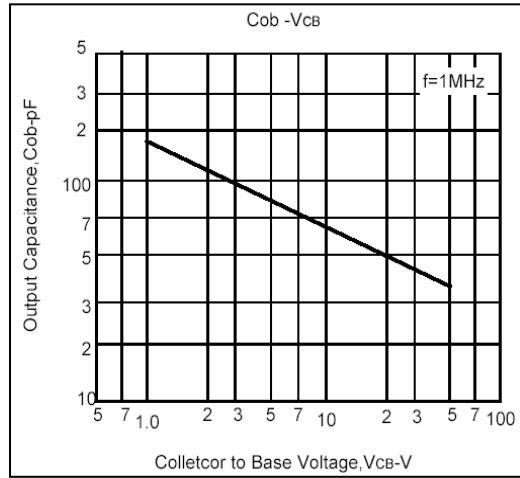
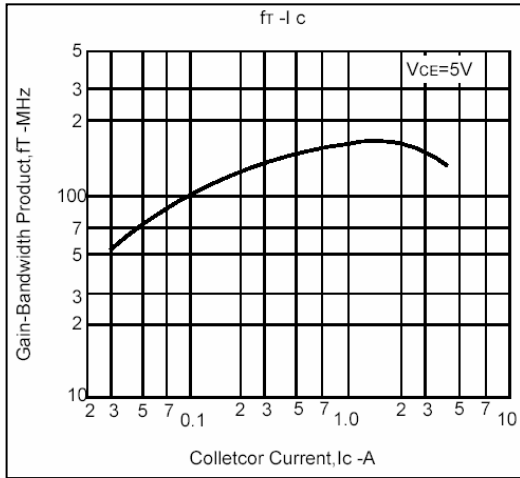
Rank	Q	R	S	T
Range	70 ~ 140	100 ~ 200	140 ~ 280	200 ~ 400

## Switching Time Test Circuit



## Characteristics Curve





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