Ordering number:EN2262B

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1552/2SC4027

High-Voltage Switching Applications

Applications

· Converters, inverters, color TV audio output.

Features

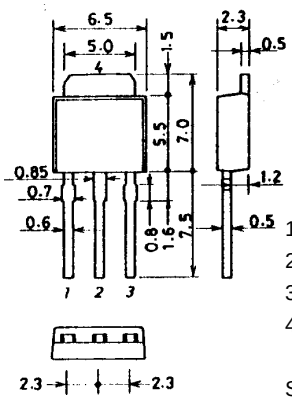
· Adoption of FBET, MBIT processes.
· High voltage and large current capacity.
· Fast switching time.
· Small and slim package permitting 2SA1522/ 2SC4027-applied sets to be made more compact.

Package Dimensions

unit:mm

2045B

[2SA1552/2SC4027]



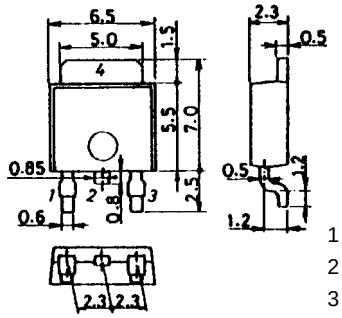
1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP

unit:mm

2044B

[2SA1552/2SC4027]



1 : Base
2 : Collector
3 : Emitter
4 : Collector

SANYO : TP-FA

( ) : 2SA1552

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)180	V
Collector-to-Emitter Voltage	V_{CEO}		(–)160	V
Emitter-to-Base Voltage	V_{EBO}		(–)6	V
Collector Current	I_C		(–)1.5	A
Collector Current (Pulse)	I_{CP}		(–)2.5	A
Collector Dissipation	P_C		1	W
		Tc=25˚C	15	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

* : The 2SA1552/2SC4027 are classified by 100mA h_{FE} as follows :

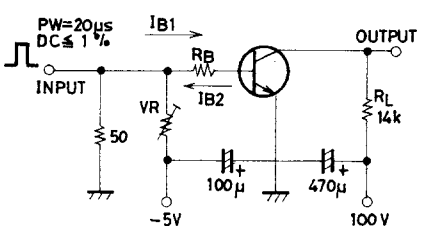
100 R 200	140 S 280	200 T 400

SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)120V, I_E=0			(–)1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)1.0	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)5V, I_C=(–)100mA	100		400	
	$h_{FE}2$	V_{CE}=(–)5V, I_C=(–)10mA	80			
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		120		MHz
Output Capacitance	C_{ob}	V_{CB}=–(–)10V, f=1MHz		12		pF
				(22)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)500mA, I_B=(–)50mA		(–0.2)	(–0.5)	V
				0.13	0.45	
Base-to-Emitter Saturation Voltatage	$V_{BE(sat)}$	I_C=(–)500mA, I_B=(–)50mA		(–)0.85	(–)1.2	V
Collector-to-Base Breakdown Volage	$V_{(BR)CBO}$	I_C=(–)10A, I_E=0	(–)180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	(–)160			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	(–)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		60		μs
Storage Time	t_{stg}	See specified Test Circuit.		(0.7)		μs
				1.2		
Fall Time	t_f	See specified Test Circuit.		(50)		μs
				80		

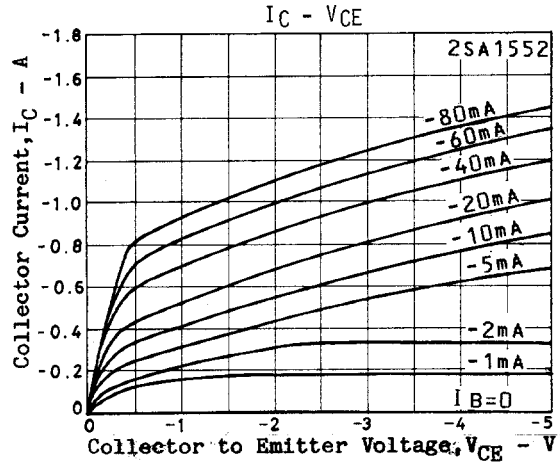
Switching Time Test Circuit

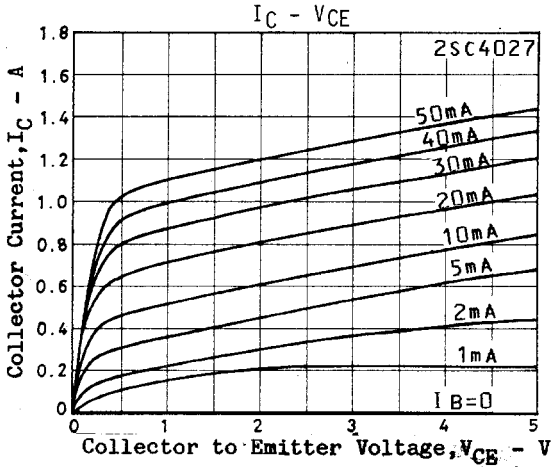


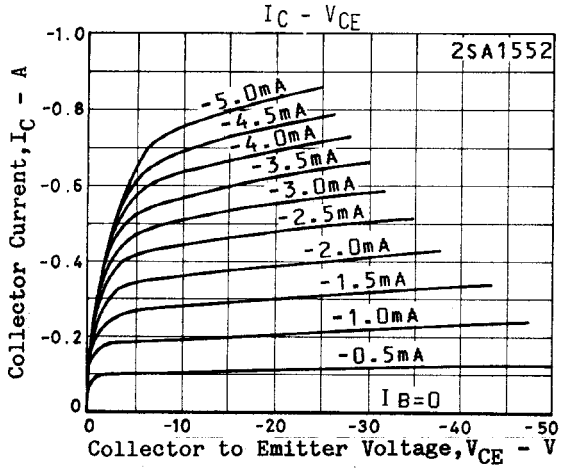
$10I_{B1} = -10I_{B2} = I_C = 0.7A$

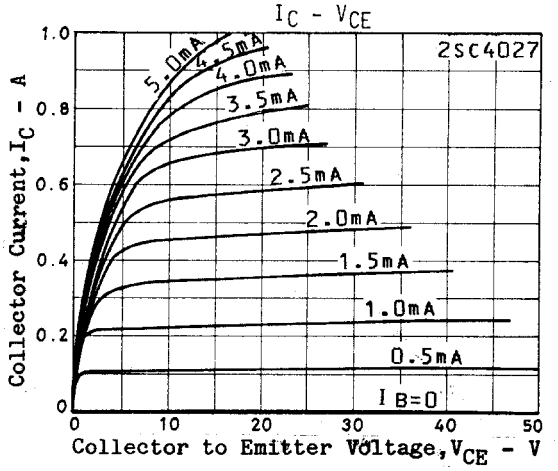
For PNP, the polarity is reversed.

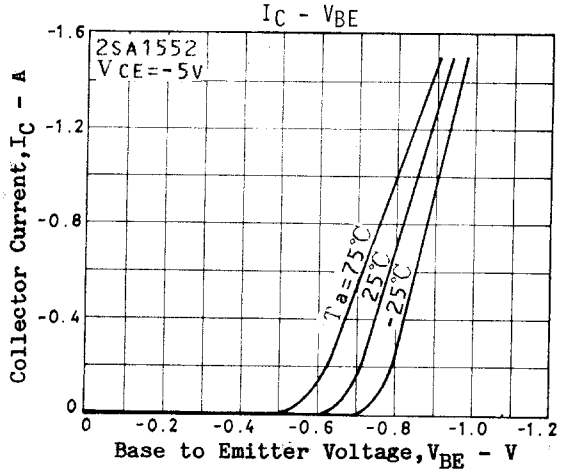
Unit (resistance :Ω, capacitance : F)

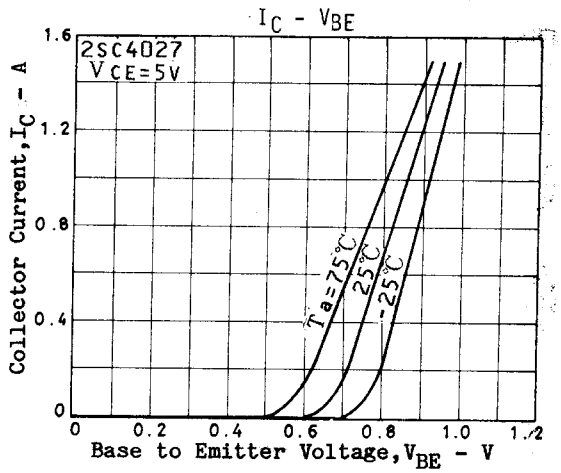


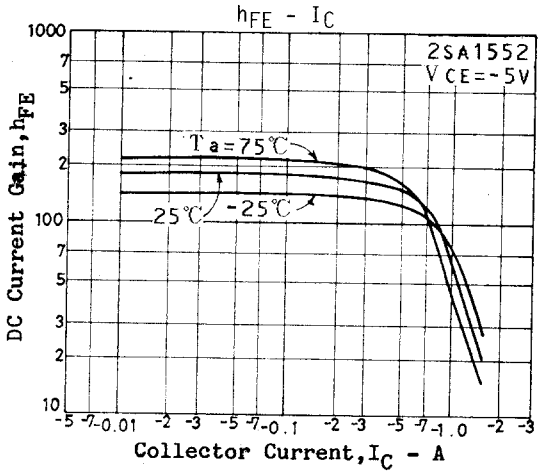


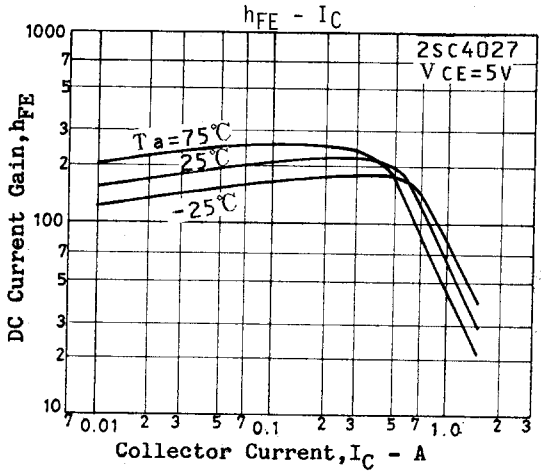


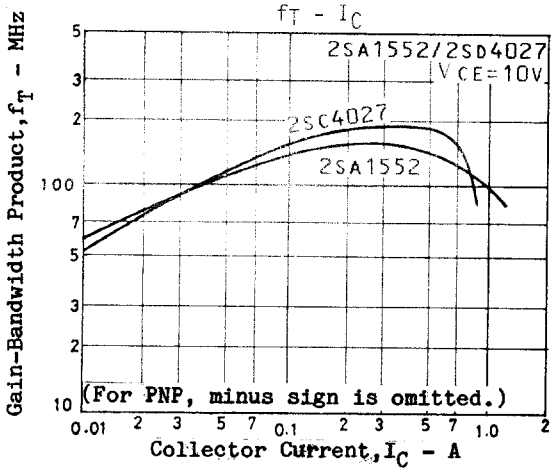


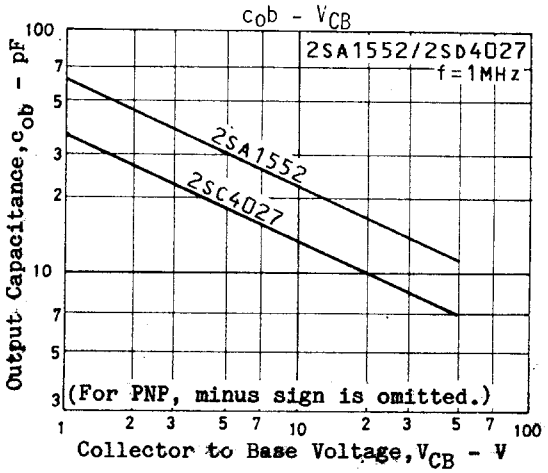

I_C - V_{BE}
2SA1552
VCE=-5V
Ta=75℃
25℃
-25℃
Collector Current, I_C - A
Base to Emitter Voltage, V_{BE} - V

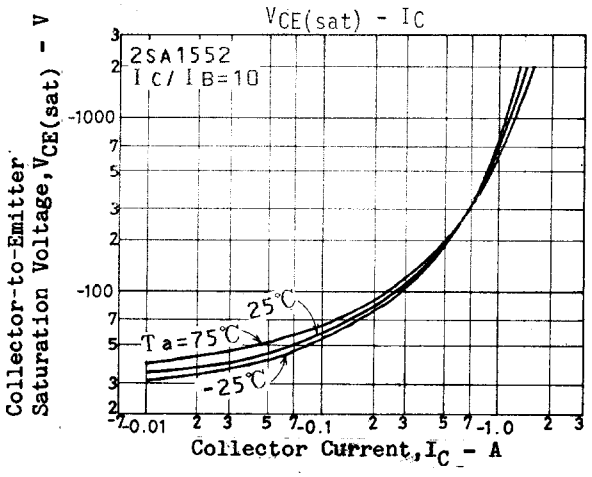

I_C - V_{BE}
2SC4027
VCE=5V
Ta=75℃
25℃
-25℃
Collector Current, I_C - A
Base to Emitter Voltage, V_{BE} - V

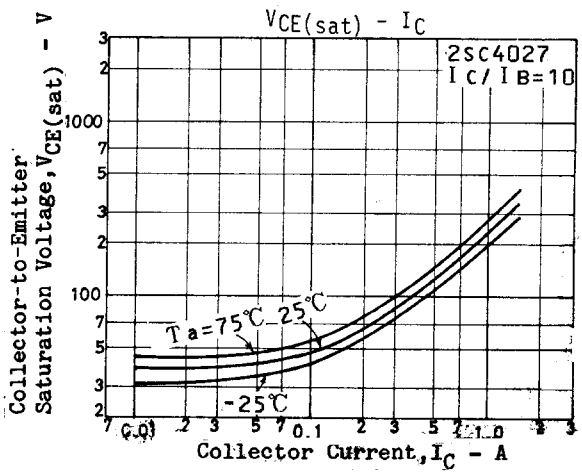

h_{FE} - I_C
2SA1552
VCE=-5V
Ta=75℃
25℃
-25℃
DC Current Gain, h_{FE}
Collector Current, I_C - A


h_{FE} - I_C
2SC4027
VCE=5V
Ta=75℃
25℃
-25℃
DC Current Gain, h_{FE}
Collector Current, I_C - A


f_T - I_C
2SA1552/2SD4027
VCE=10V
2SC4027
2SA1552
(For PNP, minus sign is omitted.)
Gain-Bandwidth Product, f_T - MHz
Collector Current, I_C - A


C_{ob} - V_{CB}
2SA1552/2SD4027
f=1MHz
2SA1552
2SC4027
(For PNP, minus sign is omitted.)
Output Capacitance, C_{ob} - pF
Collector to Base Voltage, V_{CB} - V


$V_{CE(sat)}$ - I_C
2SA1552
IC/IB=10
25℃
Ta=75℃
-25℃
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ - V
Collector Current, I_C - A


$V_{CE(sat)}$ - I_C
2SC4027
IC/IB=10
Ta=75℃
25℃
-25℃
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ - V
Collector Current, I_C - A