Ordering number:EN3871

NPN Epitaxial Planar Silicon Transistor

2SC4727

20V/8A Switching Applications

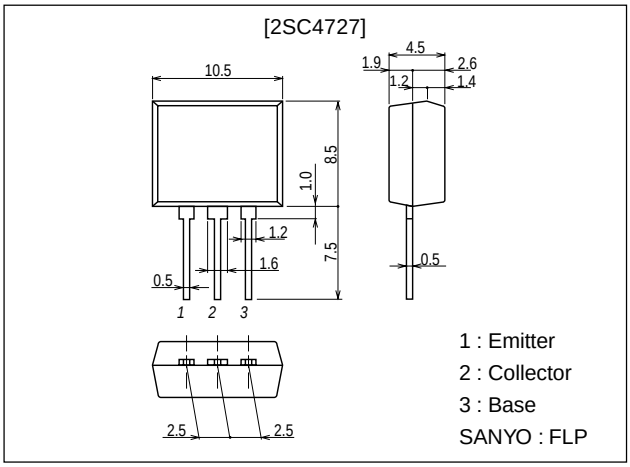
Features

- Adoption of MBIT process.
- Low saturation voltage.
- Fast switching speed.
- Large current capacity.
- It is possible to make appliances more compact because its height on board is 9.5mm.
- Effective in automatic inserting and counting stocked amount because of being provided for radial taping.

Package Dimensions

unit:mm

2084B



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		30	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		8	A
Collector Current (Pulse)	I_{CP}		12	A
Base Current	I_B		1.5	A
Collector Dissipation	P_C		1.5	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=500mA	100*		400*	
	$h_{FE}2$	V_{CE}=2V, I_C=6A	70			
Gain-Bandwidth Product	f_T	V_{CE}=2V, I_C=500mA		250		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=5A, I_B=250mA		220	400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=5A, I_B=250mA		1	1.3	V

* : The 2SC4727 is classified by 500mA h_{FE} as follows :

100	R	200	140	S	280	200	T	400

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SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

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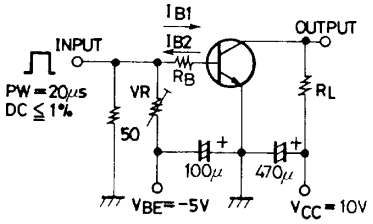
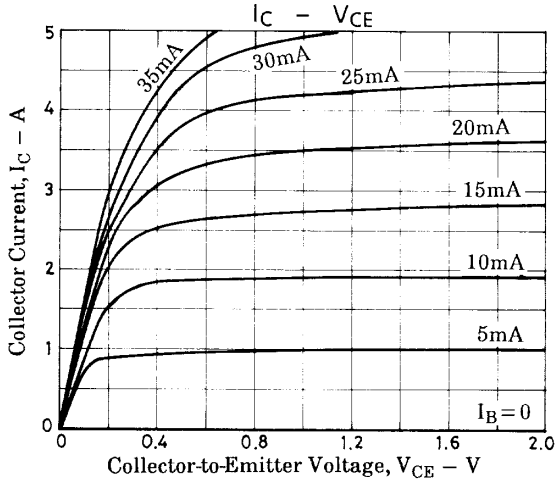
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		60		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	20			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	5			V
Turn-ON Time	t_{on}	See specified test circuit.		30		ns
Storage Time	t_{stg}	See specified test circuit.		250		ns
Fall Time	t_f	See specified test circuit.		15		ns

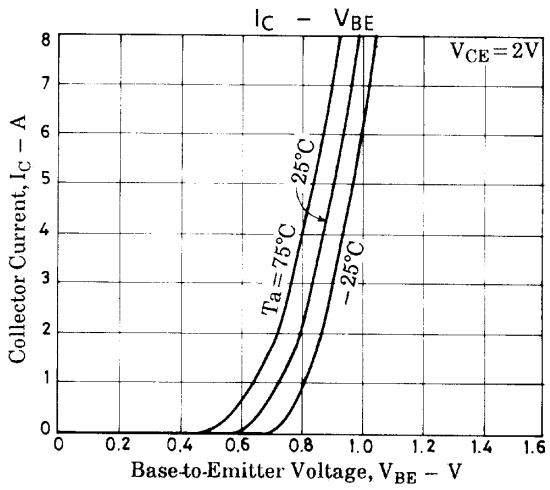
Switching Time Test Circuit

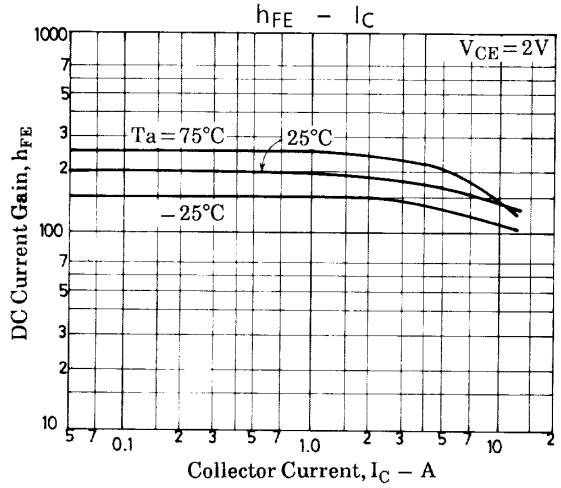


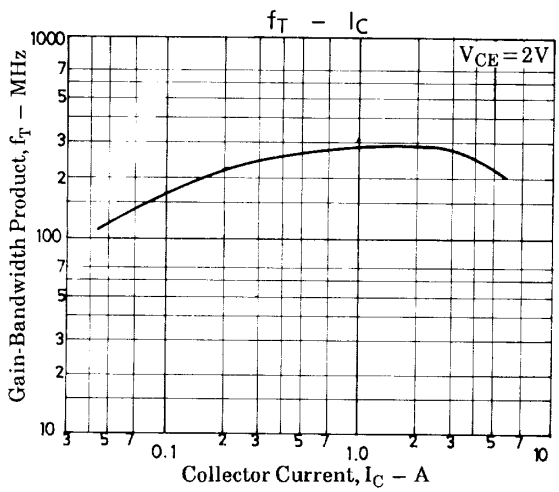
$20I_B1 = -20I_B2 = I_C = 5A$

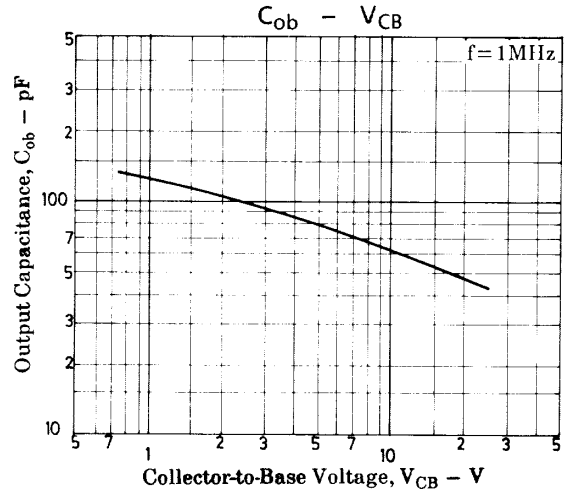
Unit (resistance : Ω, capacitance : F)

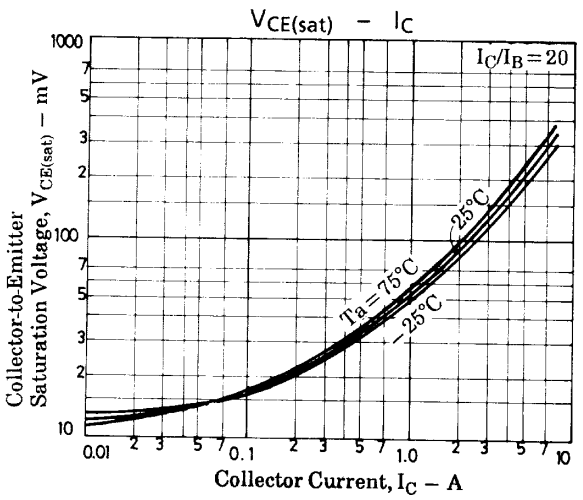


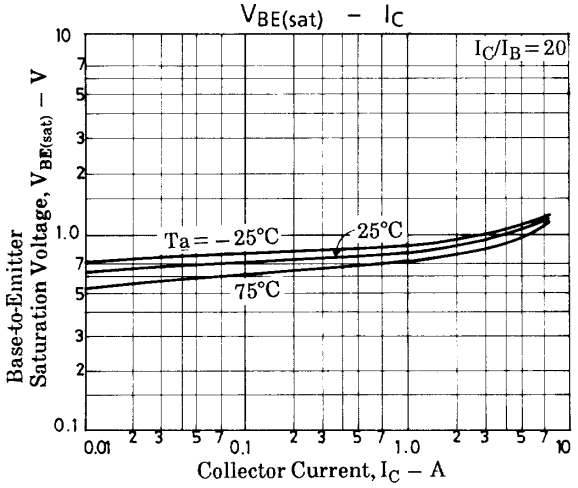


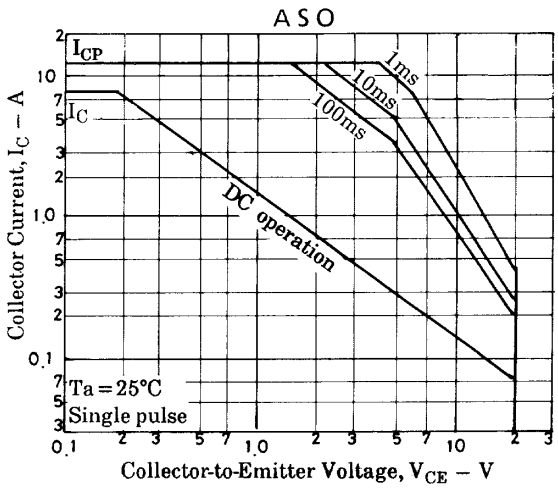


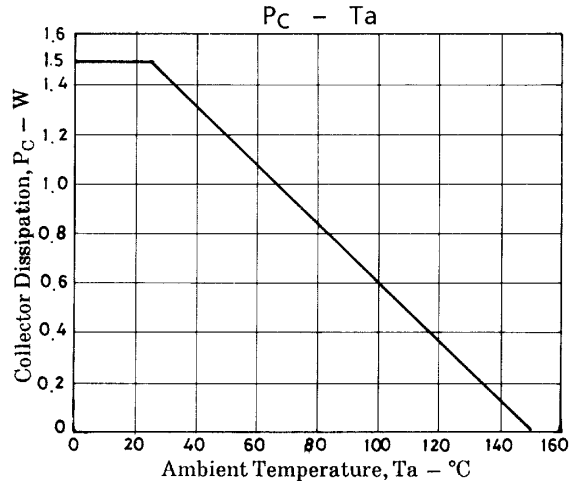



Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V


VCE(sat) – IC
IC/IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
25°C
Ta=75°C
–25°C
Collector Current, IC – A


VBE(sat) – IC
IC/IB=20
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Ta=–25°C
25°C
75°C
Collector Current, IC – A


ASO
ICP
IC
1ms
10ms
100ms
DC operation
Ta=25°C
Single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V


PC – Ta
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C

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