Ordering number : ENN7283

NPN Epitaxial Planar Silicon Transistor

FX512

DC-DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

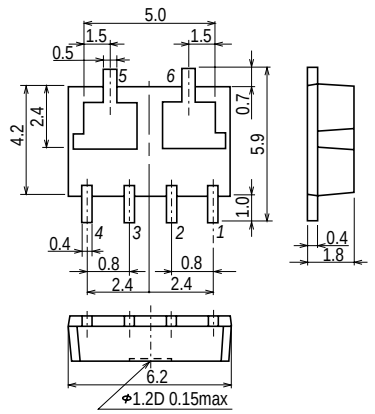
Features

- Composite type with 2 NPN transistors contained in one package, facilitaing high-density mounting.
- The FX512 contains the 2SC5566 equivalent chip in one package.
- Excellent in pair capability of a built-in element.

Package Dimensions

unit : mm
2118

[FX512]



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

SANYO : XP6
(Bottom view)

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		100	V
Collector-to-Emitter Voltage	V_{CES}		100	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		4	A
Collector Current (Pulse)	I_{CP}		7	A
Base Current	I_B		600	mA
Collector Dissipation	P_C	Mounted on a ceramic board (750mm²×0.8mm)1unit	1.5	W
Total Dissipation	P_T	Mounted on a ceramic board (750mm²×0.8mm)	1.8	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}=40V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1	μA

Marking : 512

Continued on next page.

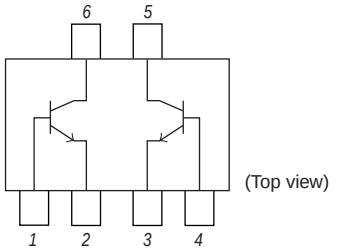
SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE}	V_{CE}=2V, I_C=500mA	200		560	
DC Current Gain Ratio	h_{FE}(small/large)	V_{CE}=2V, I_C=500mA	0.8			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=500mA		400		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		15		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=1A, I_B=50mA		85	130	mV
	V_{CE}(sat)2	I_C=2A, I_B=100mA		150	225	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=2A, I_B=100mA		0.89	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=0	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	50			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.		35		ns
Storage Time	t_{stg}	See specified Test Circuit.		300		ns
Fall Time	t_f	See specified Test Circuit.		20		ns

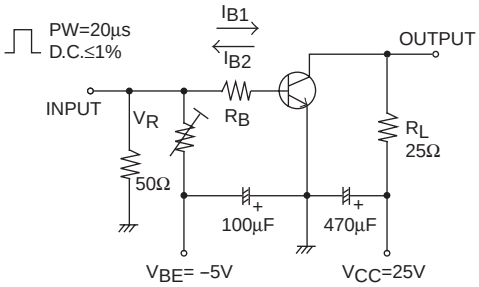
Note : The specifications shown above are for each individual transistor.

Electrical Connection

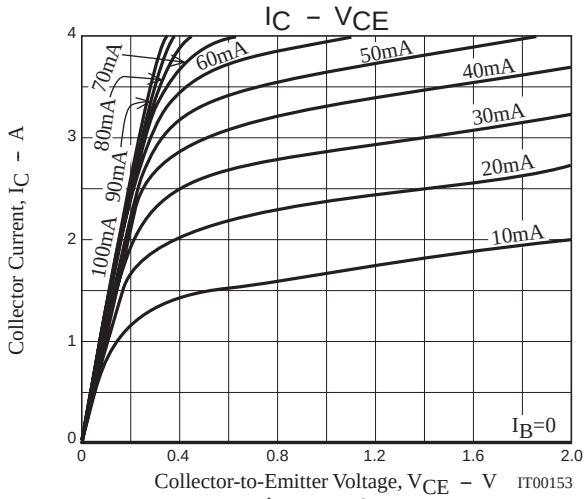


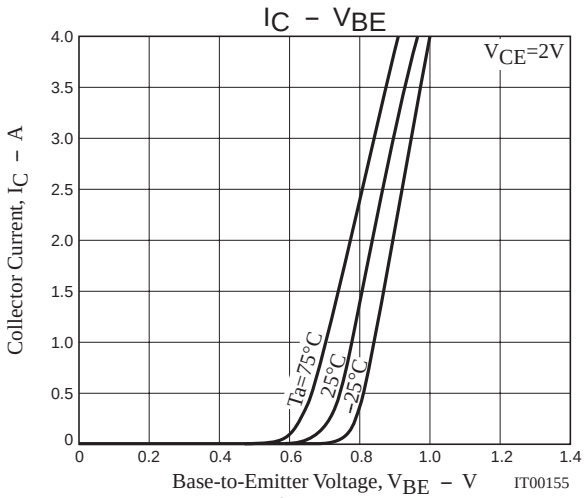
1 : Base 1
2 : Emitter 1
3 : Emitter 2
4 : Base 2
5 : Collector 2
6 : Collector 1

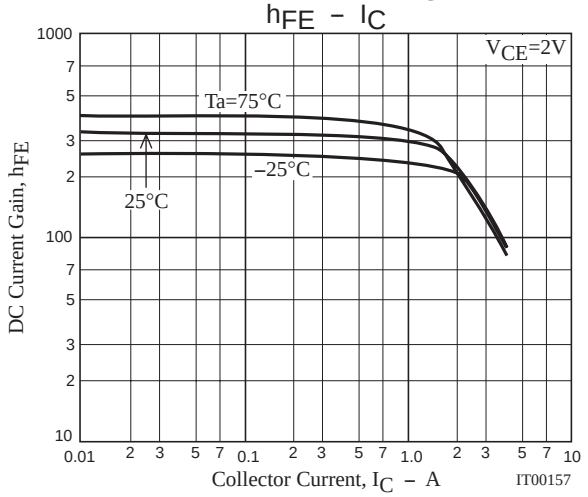
Switching Time Test Circuit

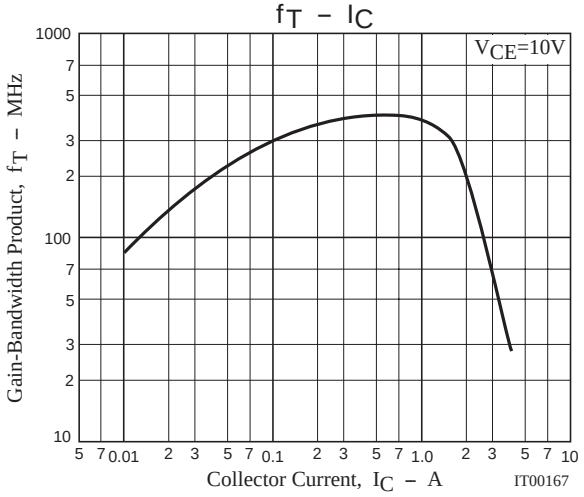


I_C=10I_{B1}= −10I_{B2}=1A

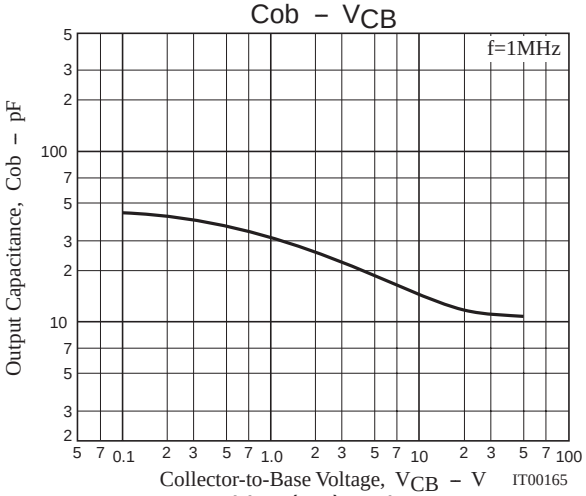




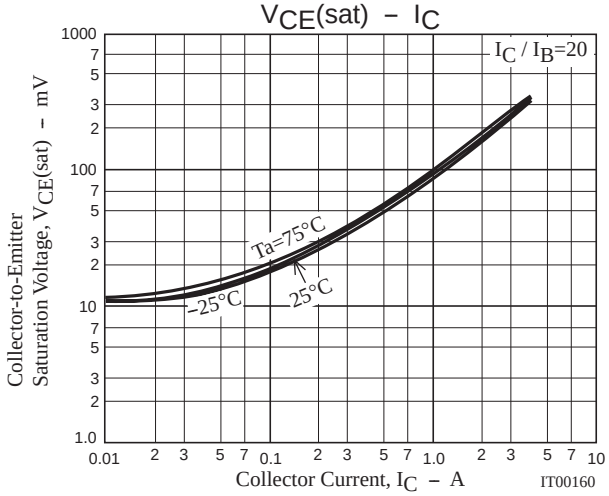




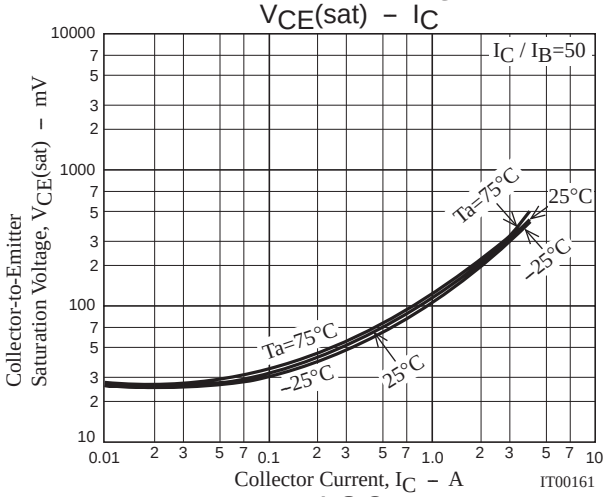
Cob – V_{CB}



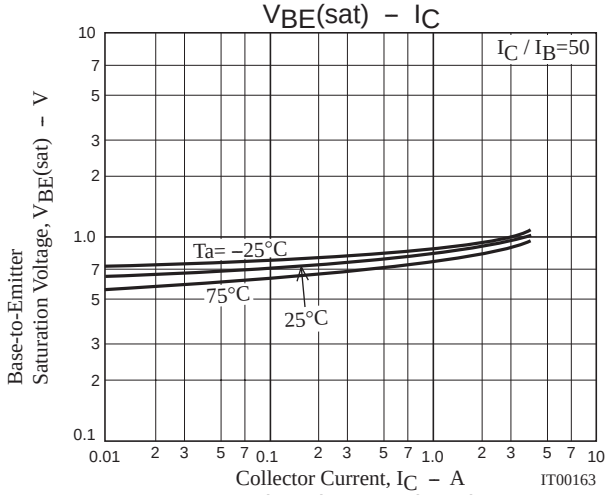
V_{CE}(sat) – I_C



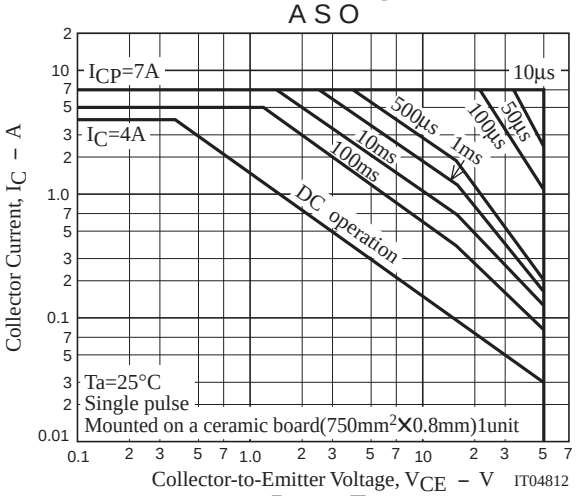
V_{CE}(sat) – I_C



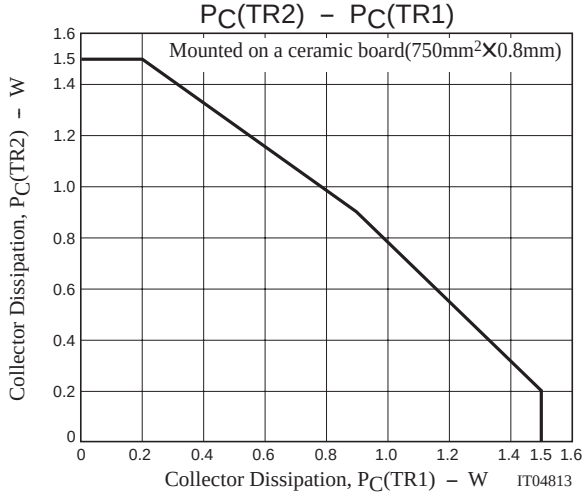
V_{BE}(sat) – I_C



A S O



P_C(TR2) – P_C(TR1)



P_C – Ta