



FX512

DC-DC Converter Applications

Applications

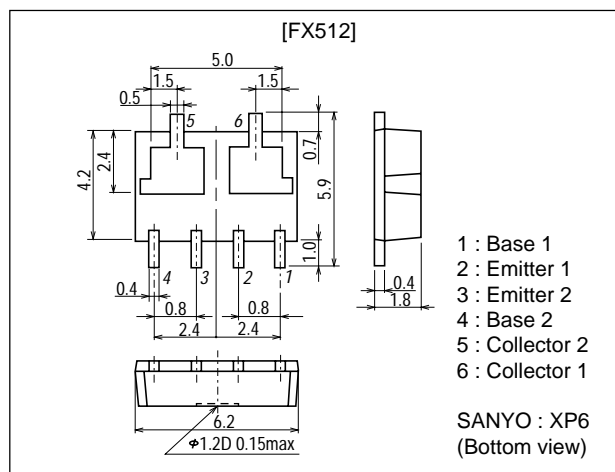
- Relay drivers, lamp drivers, motor drivers.

Features

- Composite type with 2 NPN transistors contained in one package, facilitating 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



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		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 (750mm ² X0.8mm)1unit	1.5	W
Total Dissipation	P _T	Mounted on a ceramic board (750mm ² X0.8mm)	1.8	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =40V, I _E =0			1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =4V, I _C =0			1	μA

Marking : 512

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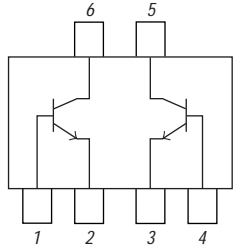
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE}	$V_{CE}=2V, I_C=500mA$	200		560	
DC Current Gain Ratio	$h_{FE}(\text{small/large})$	$V_{CE}=2V, I_C=500mA$	0.8			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=500mA$		400		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		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	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu A, R_{BE}=0$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	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

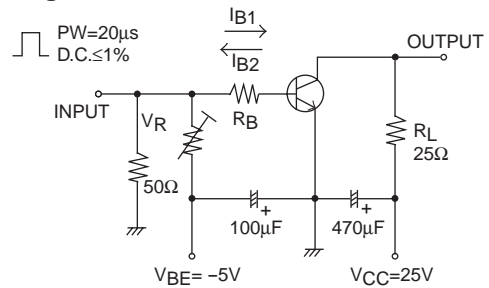
Note : The specifications shown above are for each individual transistor.

Electrical Connection

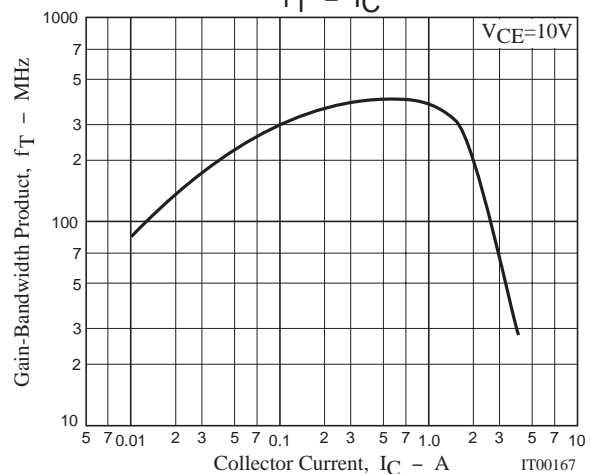
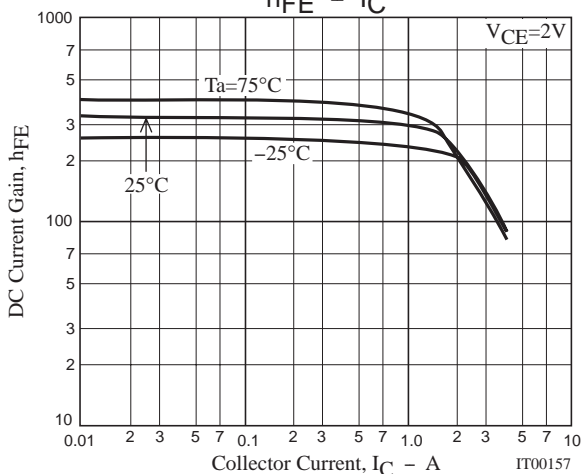
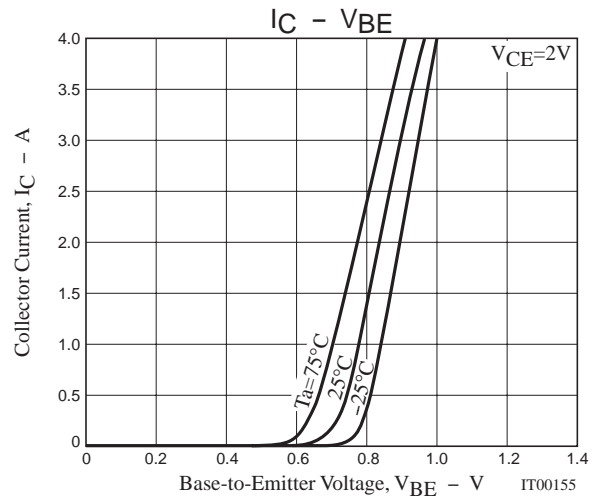
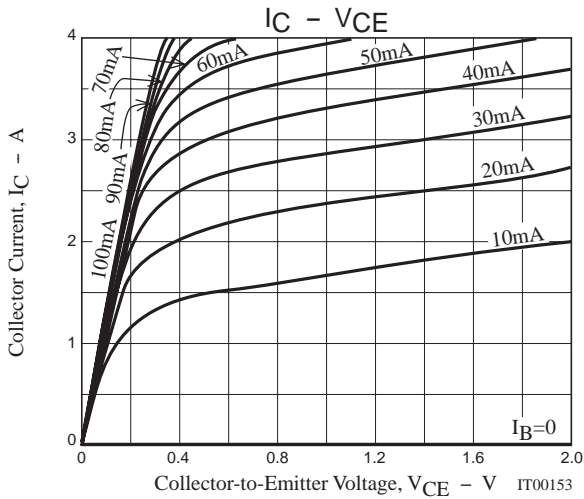


- 1 : Base 1
- 2 : Emitter 1
- 3 : Emitter 2
- 4 : Base 2
- 5 : Collector 2
- 6 : Collector 1

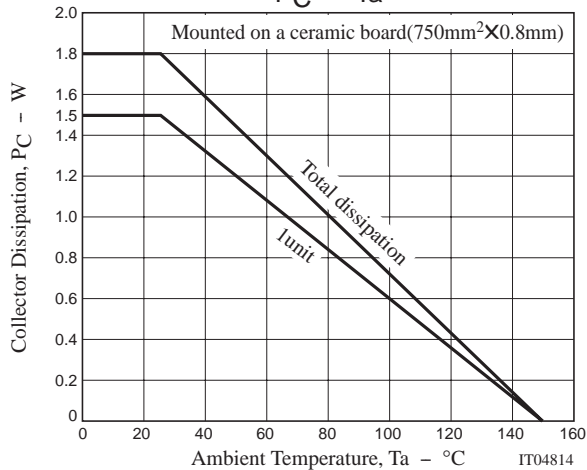
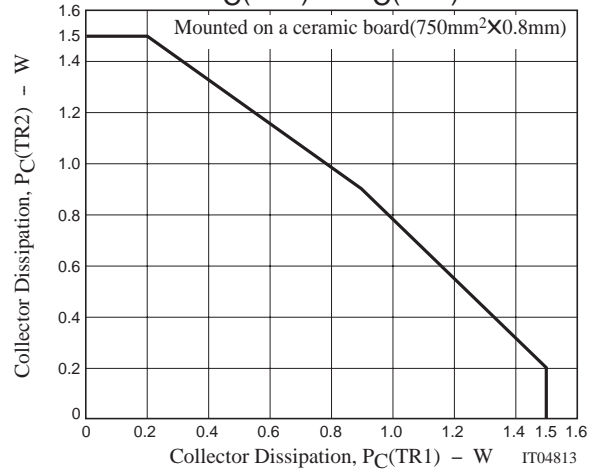
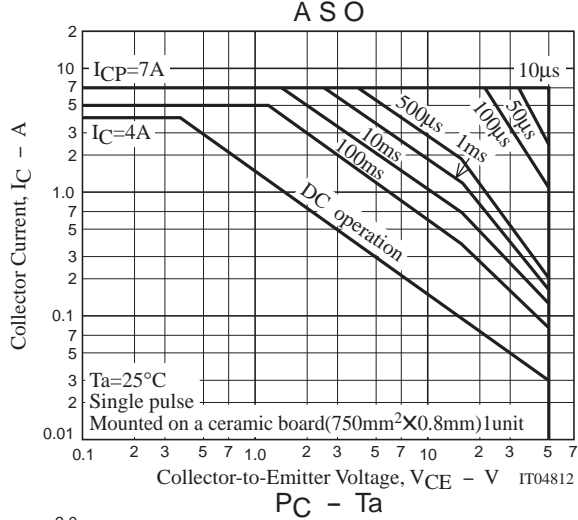
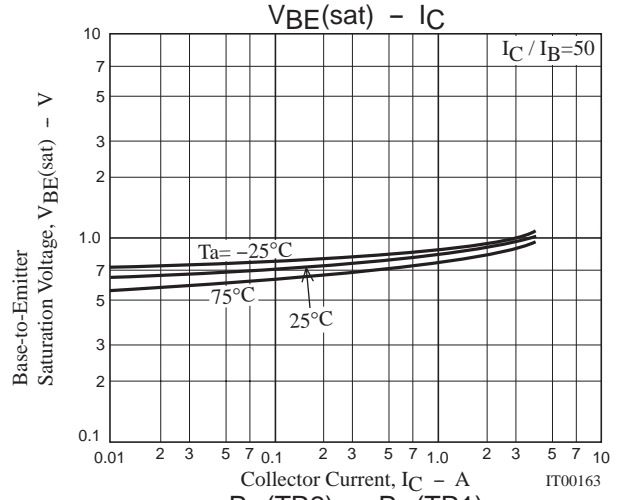
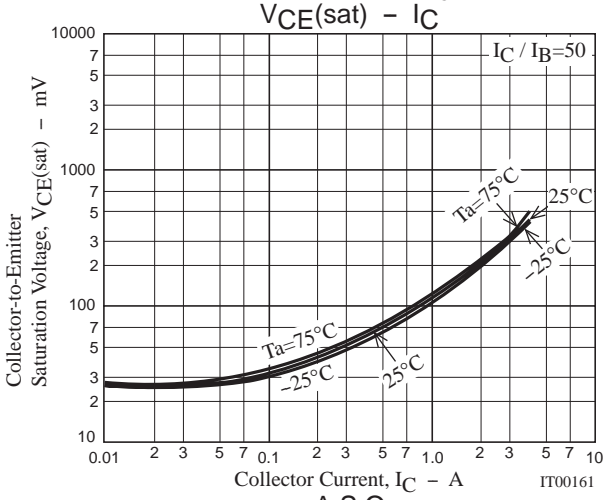
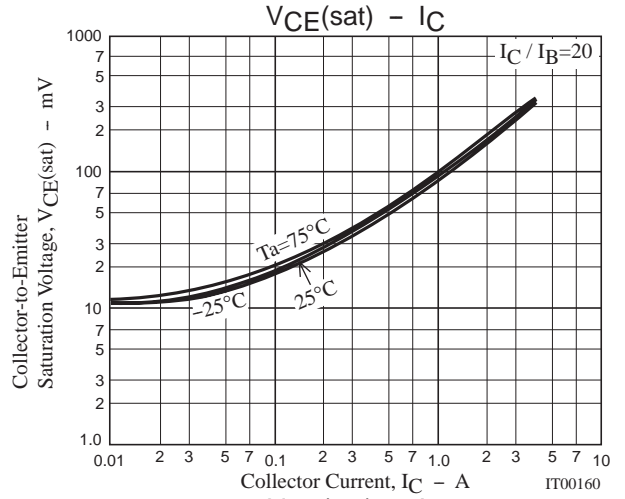
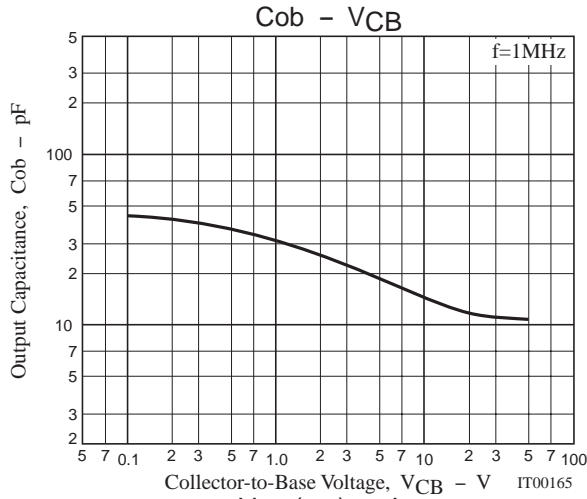
Switching Time Test Circuit



$$I_C=10I_{B1}=-10I_{B2}=1A$$



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