

Ordering number:ENN6309A

PNP/NPN Epitaxial Planar Silicon Transistors



2SA2016/2SC5569

DC/DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, strobes.

Features

- Adoption of FBET and MBIT processes.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products.
- High allowable power dissipation.

Specifications

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Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-50)80	V
Collector-to-Emitter Voltage	V _{CEO}		(-150)	V
Emitter-to-Base Voltage	V _{EBO}		(-6)	V
Collector Current	I _C		(-7)	A
Collector Current (Pulse)	I _{CP}		(-10)	A
Base Current	I _B		(-1.2)	A
Collector Dissipation	P _C	Mounted on a ceramic board (250mm ² ×0.8mm)	1.3	W
		T _C =25°C	3.5	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			(-0.1)	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0			(-0.1)	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)500mA	200		560	
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)500mA		(290)		MHz
				330		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(50)28		pF

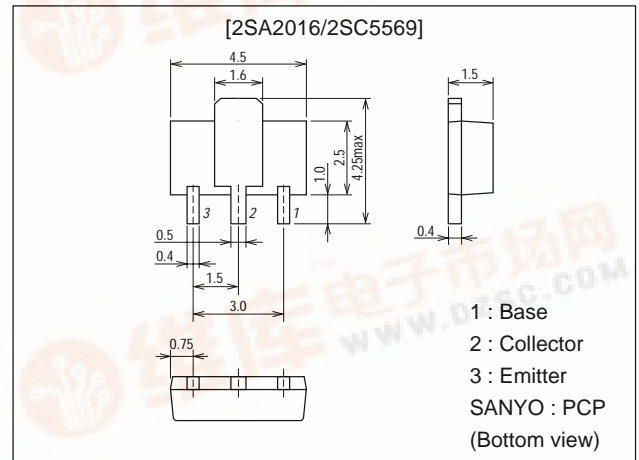
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Package Dimensions

unit:mm

2163



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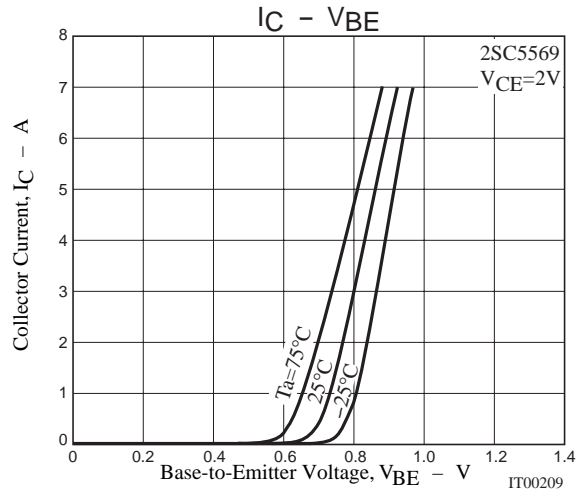
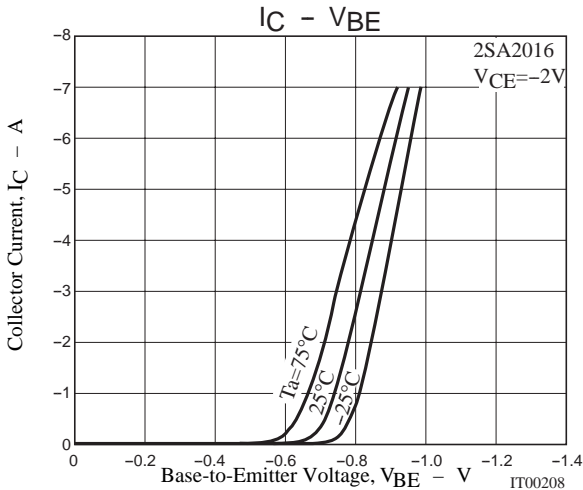
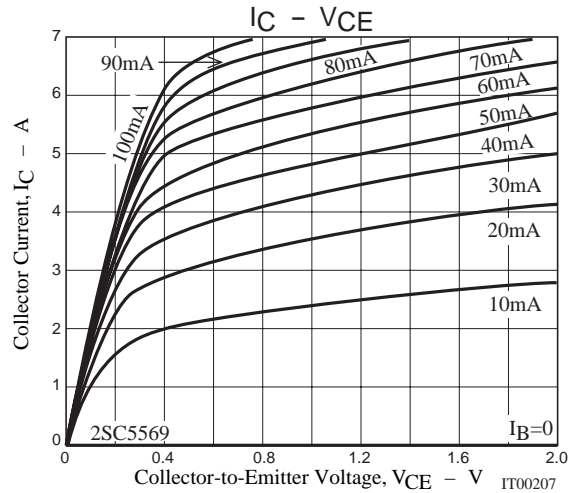
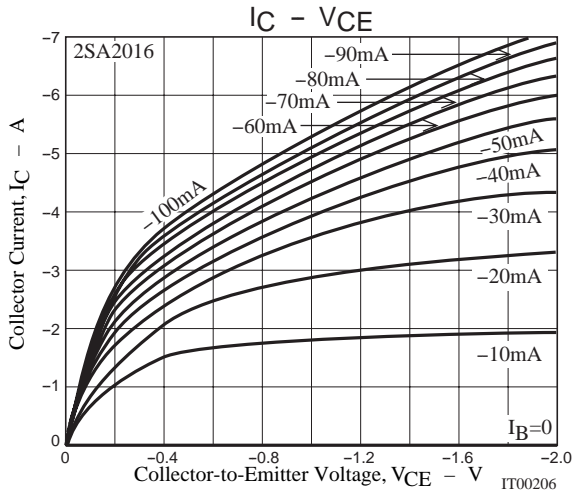
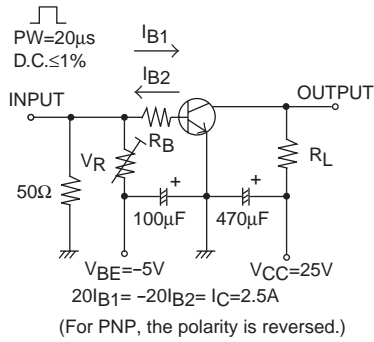


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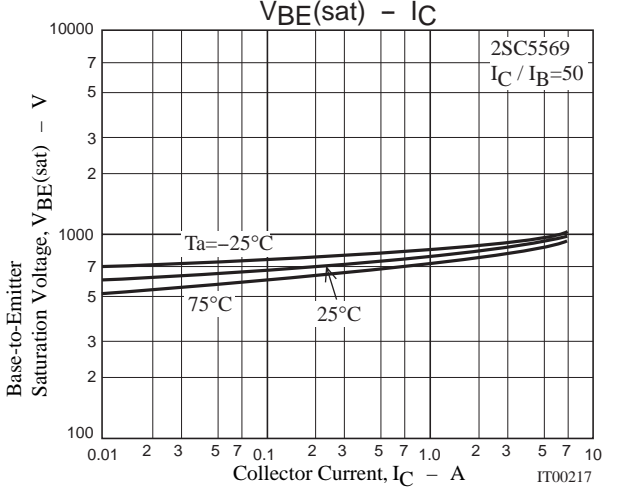
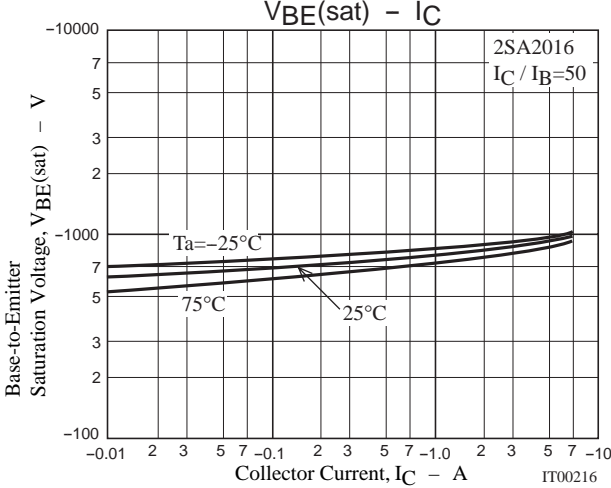
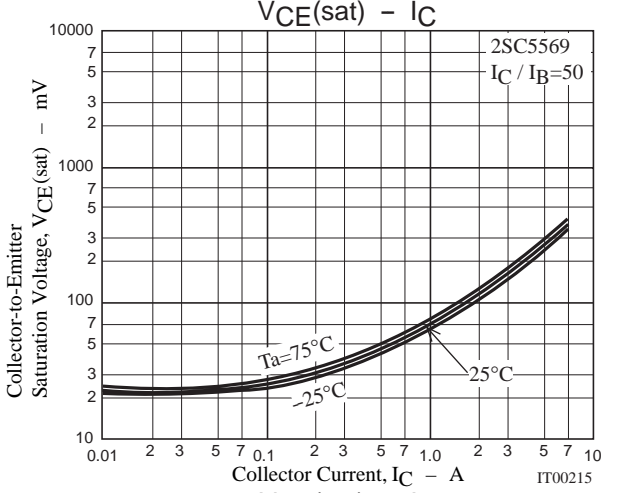
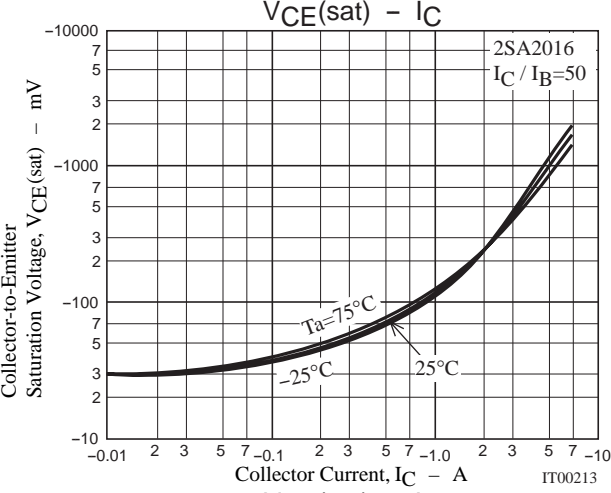
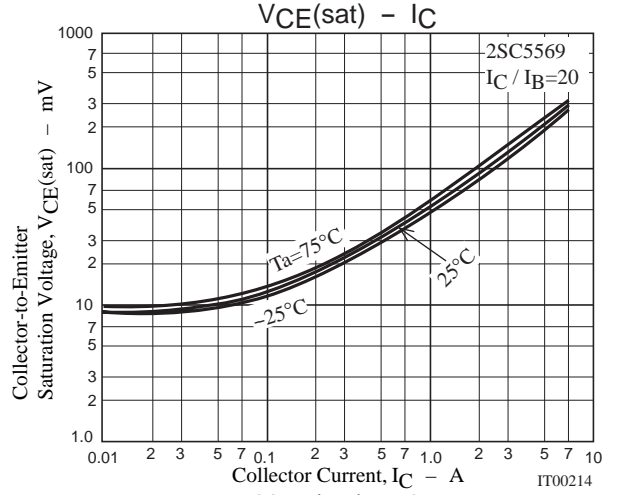
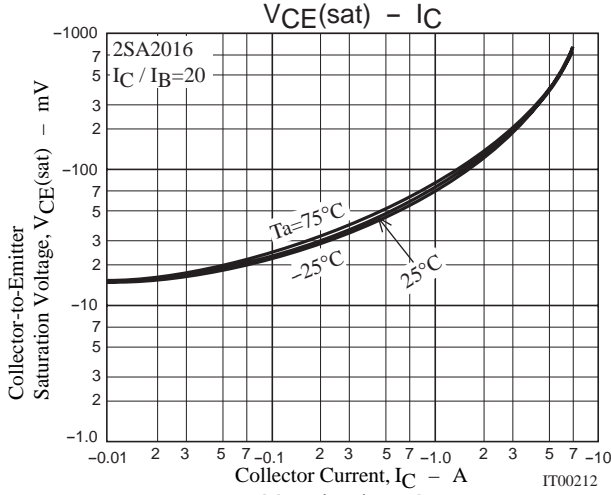
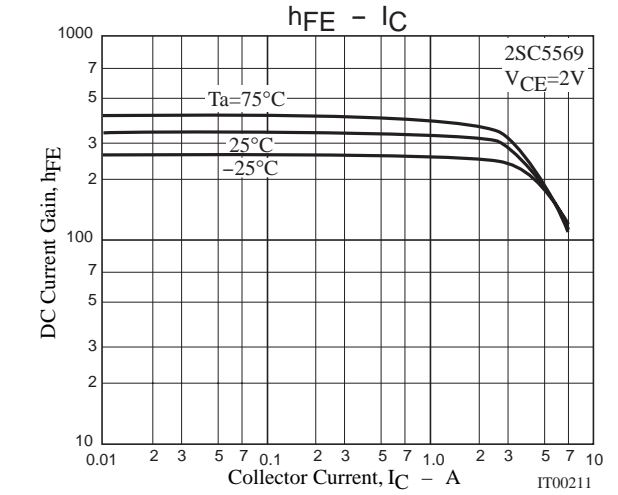
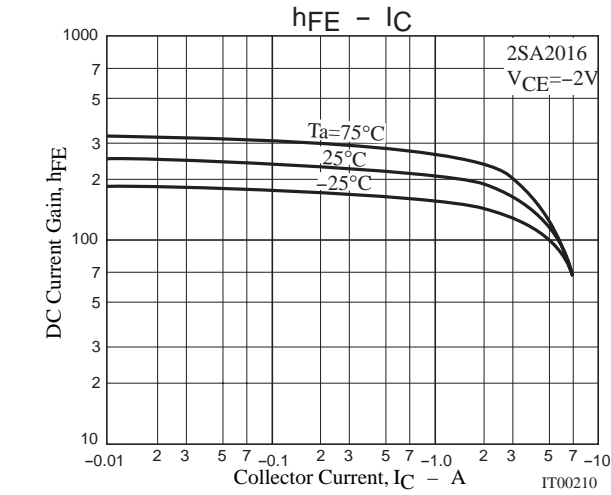
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3.5A, I_B=(-)175mA$		(-230)	(-390)	mV
				160	240	mV
		$I_C=(-)2A, I_B=(-)40mA$		(-240)	(-400)	mV
				110	170	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)2A, I_B=(-)40mA$		(-0.83)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$		(-50)		V
				80		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		(40)30		ns
Storage Time	t_{stg}	See specified Test Circuit		(225)		ns
				420		ns
Fall Time	t_f	See specified Test Circuit		25		ns

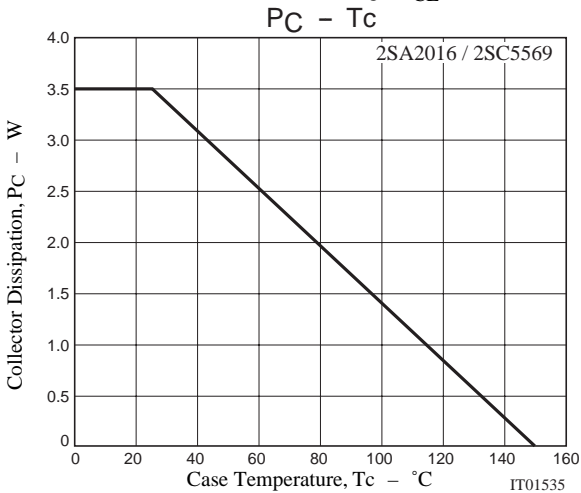
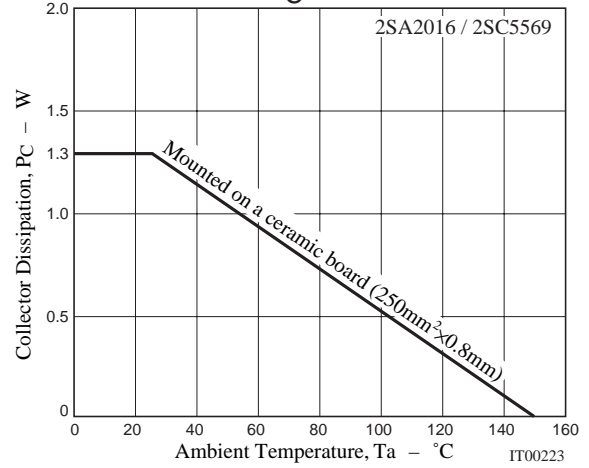
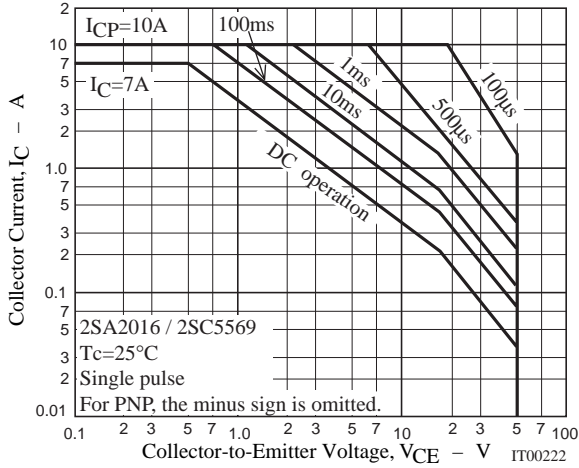
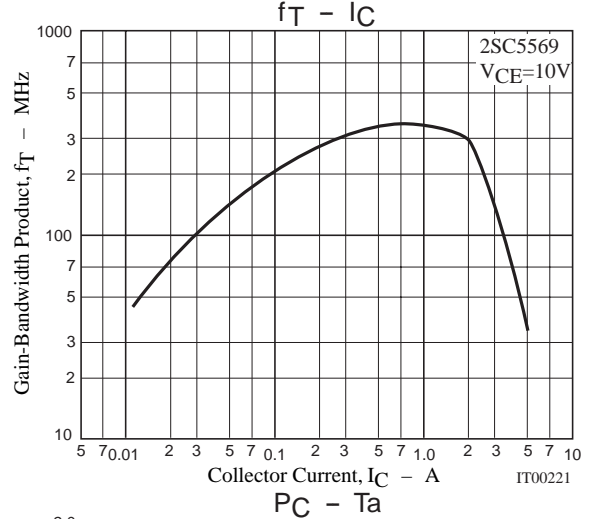
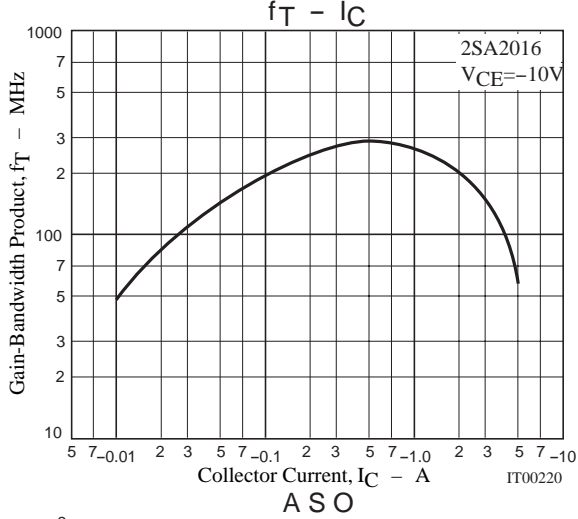
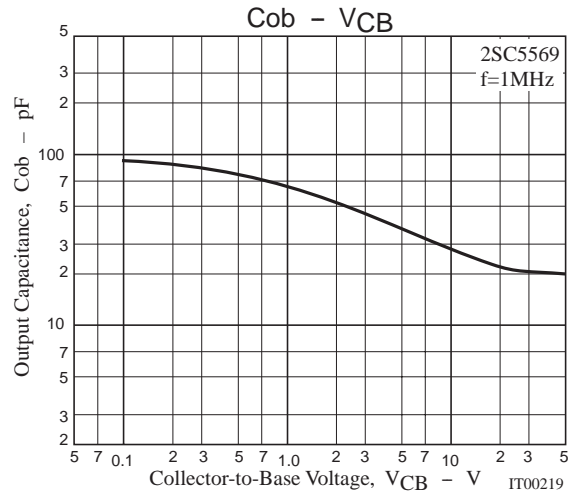
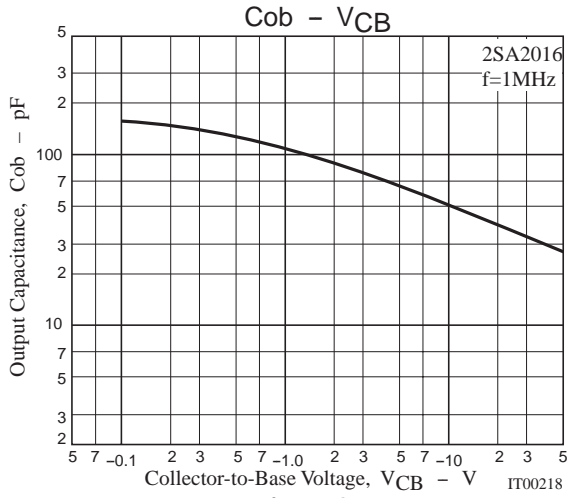
Switching Time Test Circuit



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