

PNP/NPN Epitaxial Planar Silicon Darlington Transistors



2SA1259/2SC3145

60V/5A for High-Speed Drivers Applications

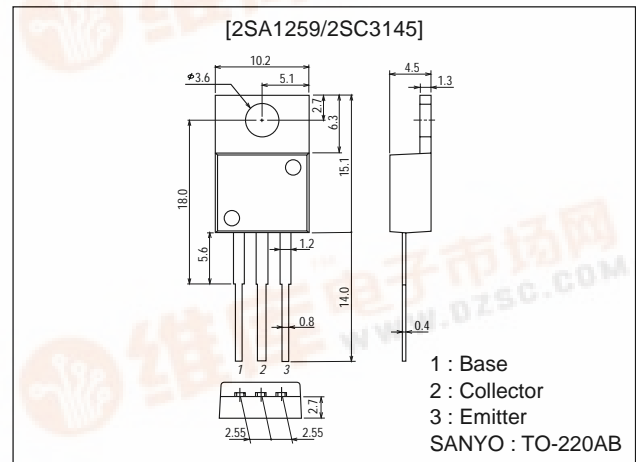
Features

- High f_T .
- High switching speed.
- Wide ASO.

Package Dimensions

unit:mm

2010C



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Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)-70	V
Collector-to-Emitter Voltage	V_{CEO}		(-)-60	V
Emitter-to-Base Voltage	V_{EBO}		(-)-5	V
Collector Current	I_C		(-)-5	A
Collector Current Pulse	I_{CP}		(-)-8	A
Collector Dissipation	P_C		1.75	W
		$T_c=25^\circ\text{C}$	30	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)40\text{V}, I_E = 0$			(-)-0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)5\text{V}, I_C = 0$			(-)-3	mA
DC Current Gain	h_{FE}	$V_{CE} = (-)2\text{V}, I_C = (-)2.5\text{A}$	2000	5000		
Gain-Bandwidth Product	f_T	$V_{CE} = (-)5\text{V}, I_C = (-)2.5\text{A}$		200		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)2.5\text{A}, I_B = (-)5\text{mA}$		(-)-1.0 0.9	(-)-1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2.5\text{A}, I_B = (-)5\text{mA}$			(-)-2.0	V

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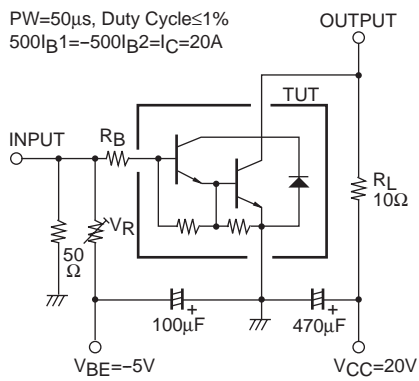


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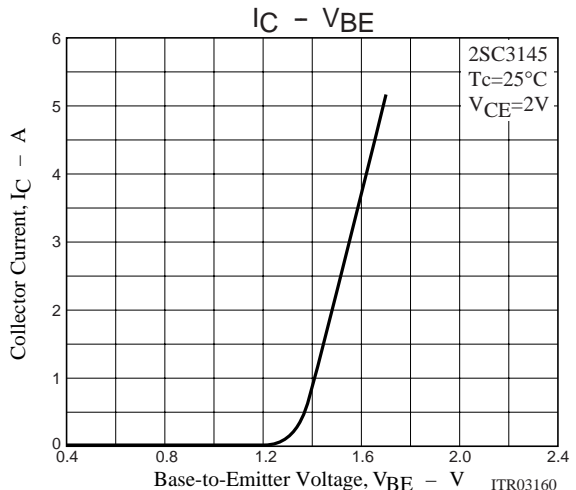
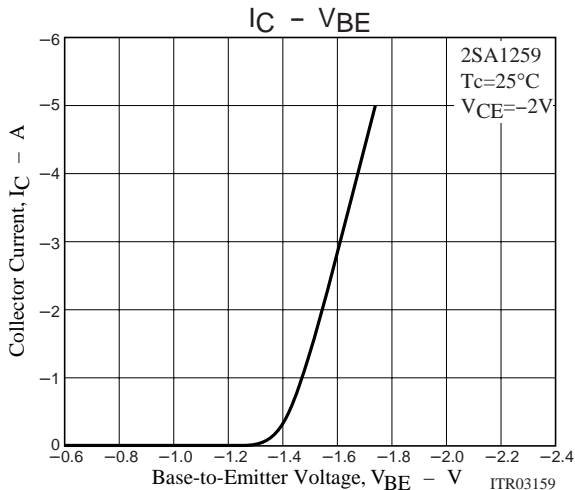
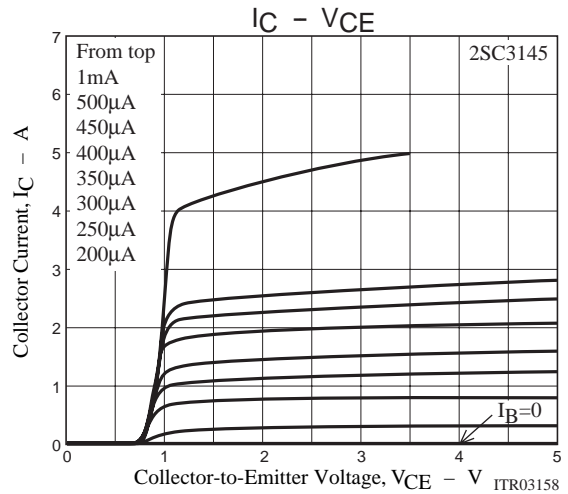
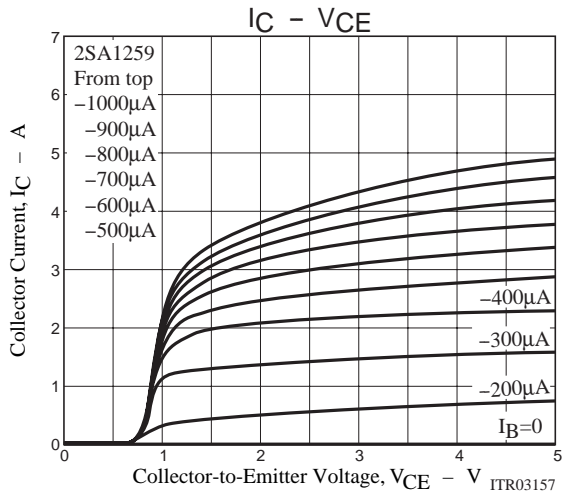
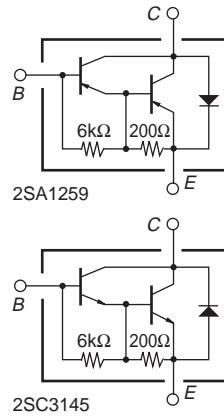
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)5mA, I_E = 0$	(-)70			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)50mA, R_{BE} = \infty$	(-)60			V
Rise Time	t_{on}	See specified Test Circuit		0.3		μs
Storage Time	t_{stg}	See specified Test Circuit		(1.3) 1.2		μs
Fall Time	t_f	See specified Test Circuit		0.2		μs

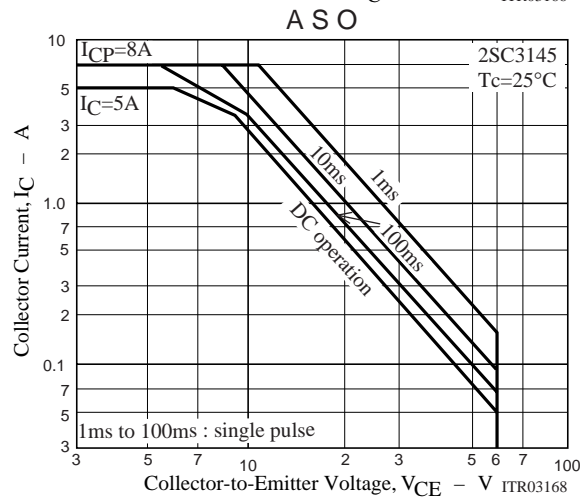
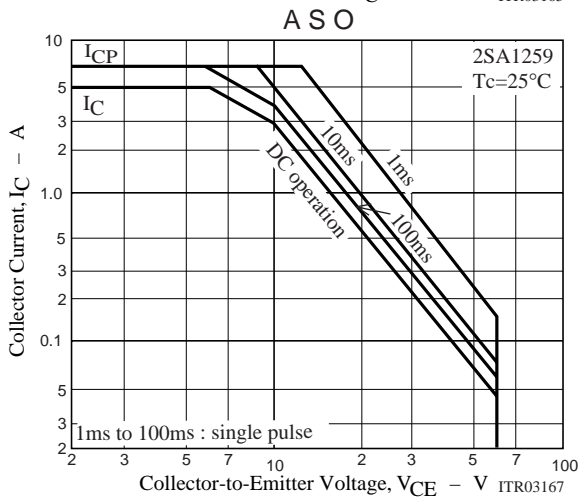
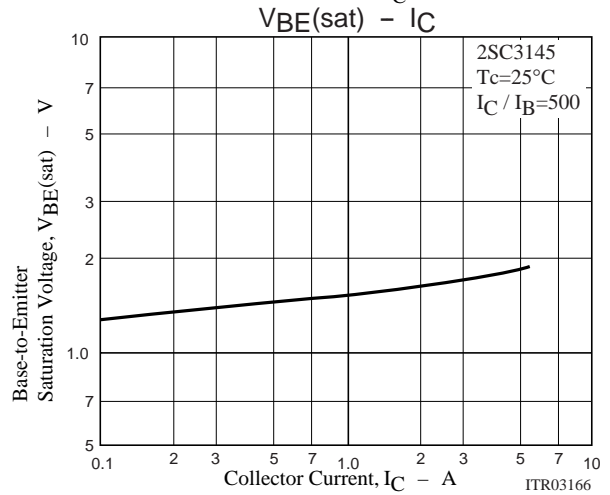
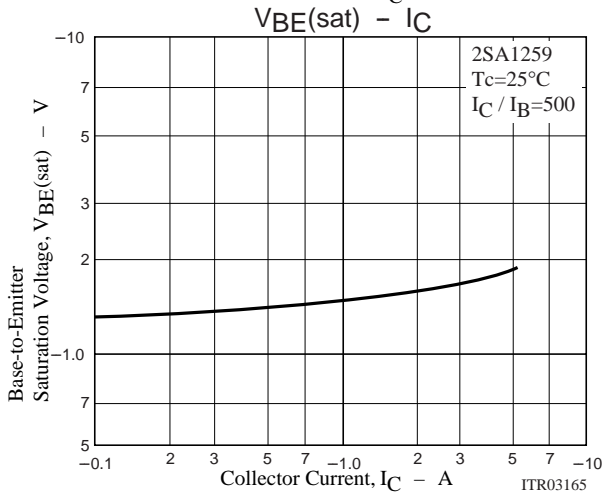
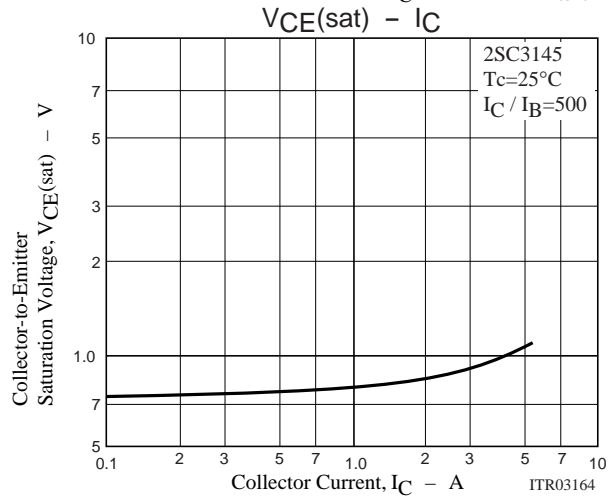
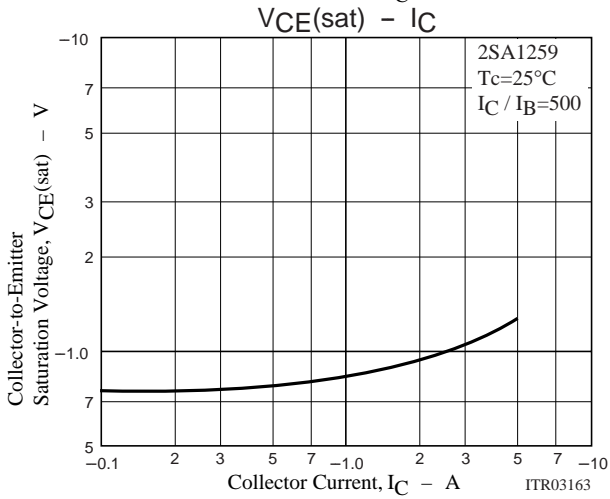
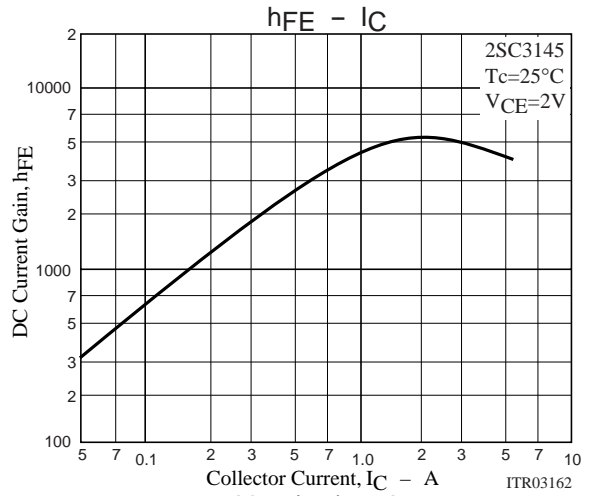
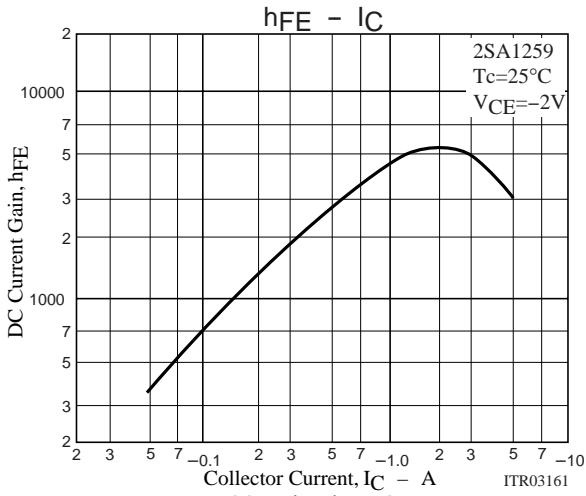
Specified Test Circuit (for PNP, the polarity is reversed)



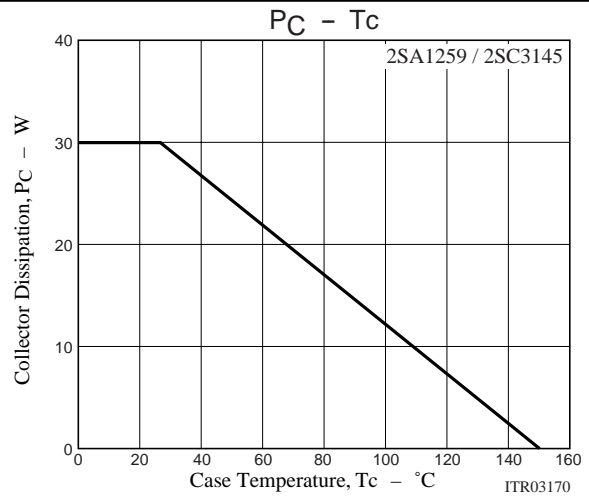
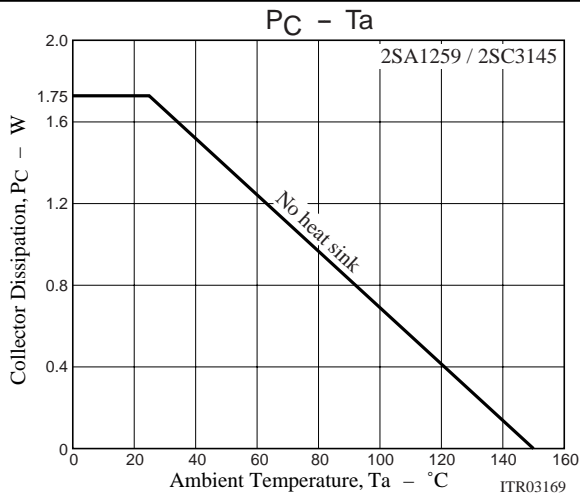
Electrical Connection



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