



2SA1258/2SC3144

60V/3A for High-Speed Drivers Applications

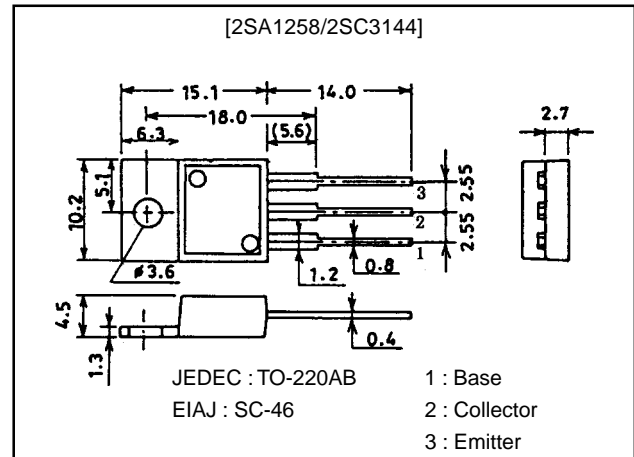
Features

- 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		(-3)	A
Collector Current (Pulse)	I_{CP}		(-5)	A
Collector Dissipation	P_C		1.75	W
		$T_c=25^\circ\text{C}$	20	W
Junction Temperature	T_J		125	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +125	$^\circ\text{C}$

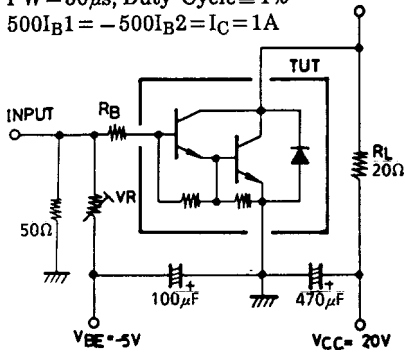
Electrical Characteristics at $T_a = 25^\circ\text{C}$

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}	$V_{CE}=(-)2\text{V}$, $I_C=(-)1.5\text{A}$	2000	5000		
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5\text{V}$, $I_C=(-)1.5\text{A}$		200		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1.5\text{A}$, $I_B=(-)3\text{mA}$		(-1.0) 0.9	(-1.5)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1.5\text{A}$, $I_B=(-)3\text{mA}$			(-2.0)	V
Collector-to-Base Saturation Voltage	$V_{(BR)CBO}$	$I_C=(-)5\text{mA}$, $I_E=0$	(-70)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)50\text{mA}$, $R_{BE}=\infty$	(-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

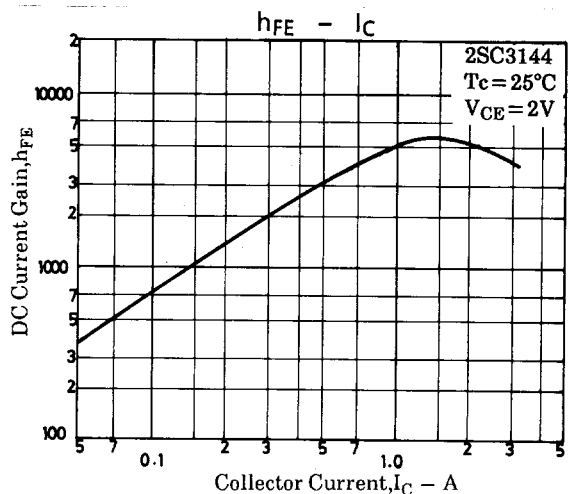
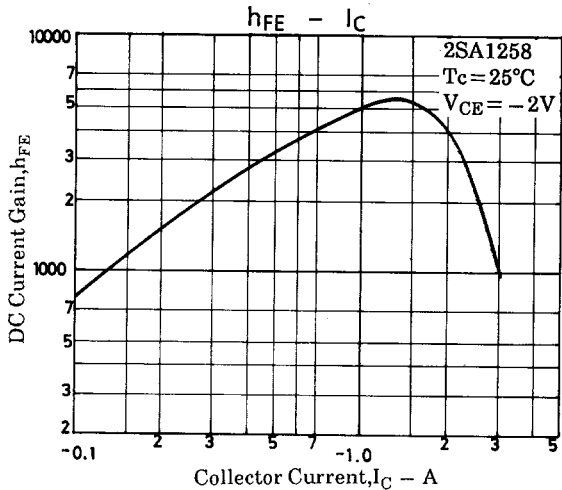
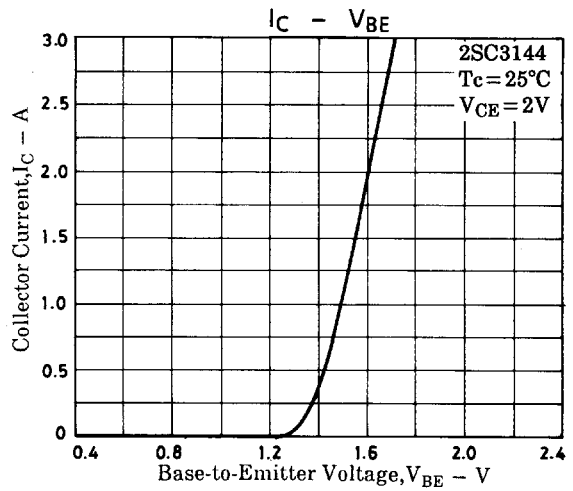
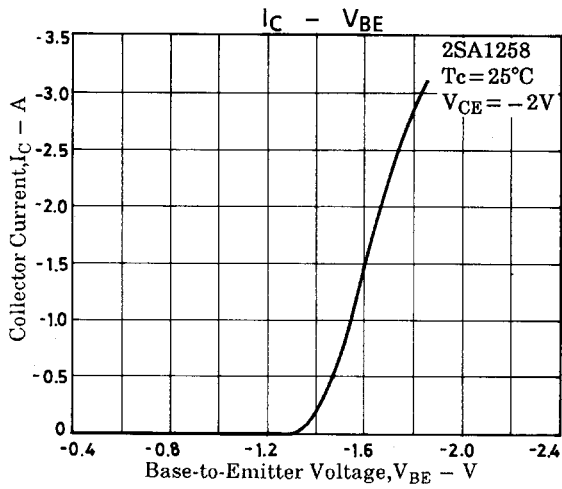
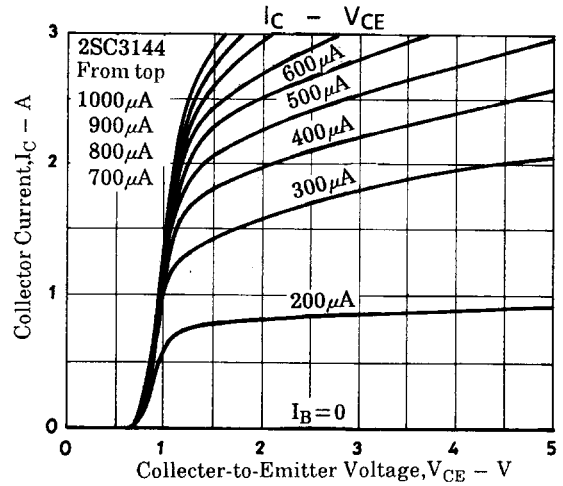
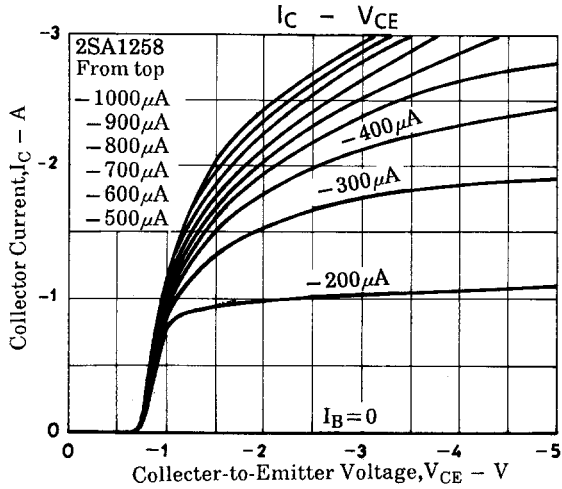
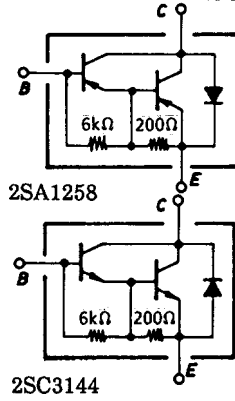
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Specified Test Circuit (for PNP, the polarity is reversed)

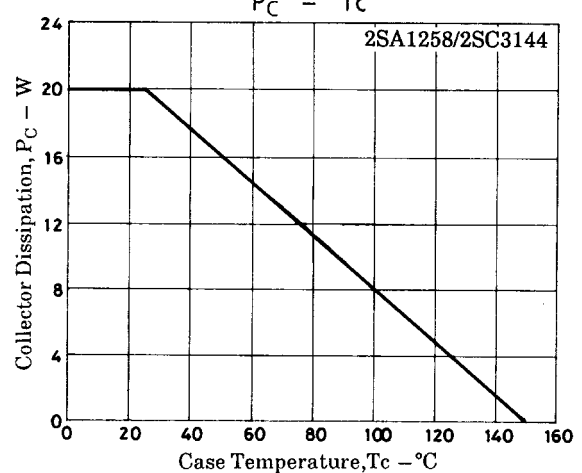
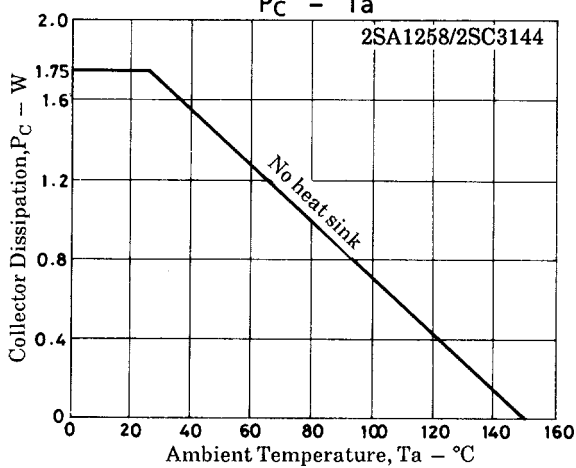
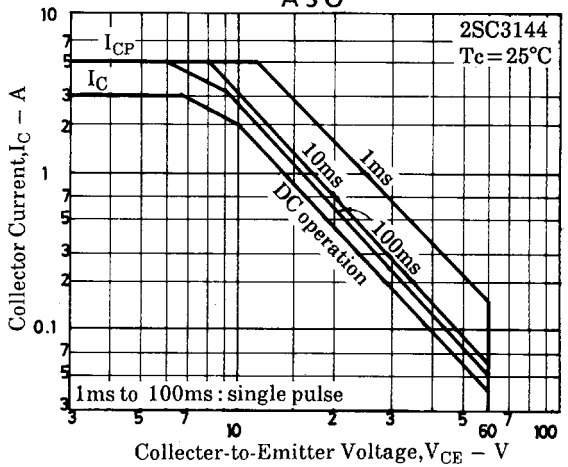
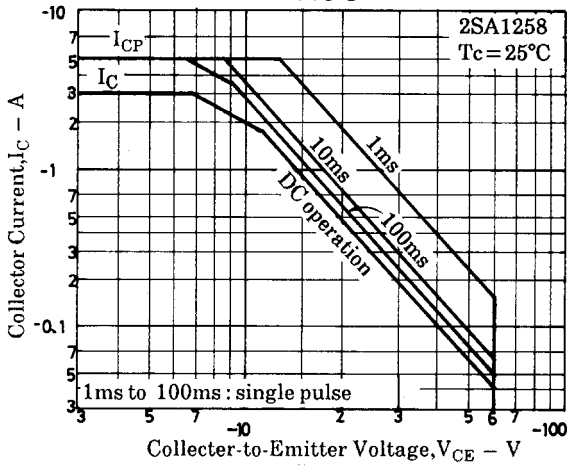
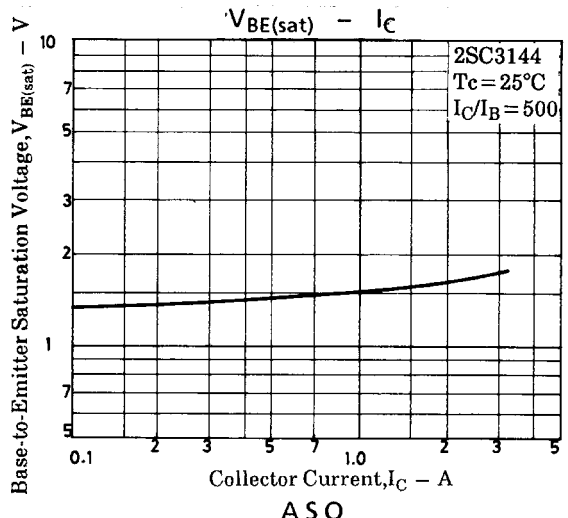
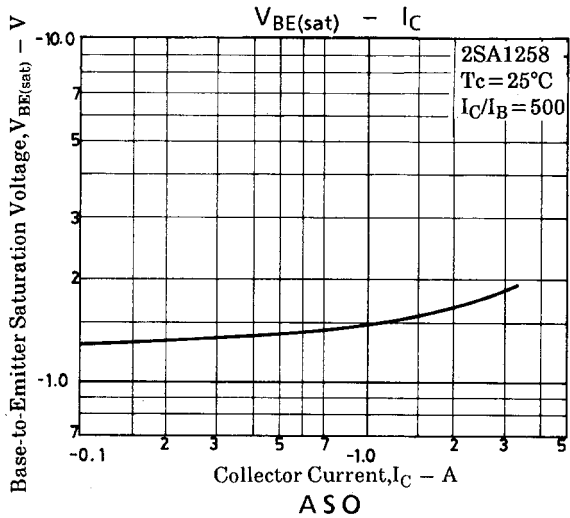
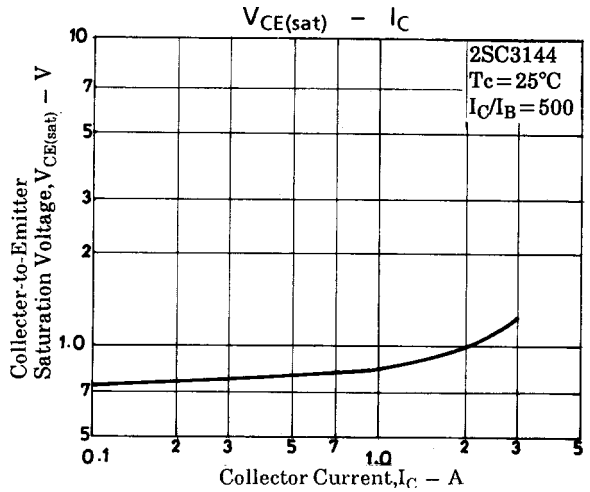
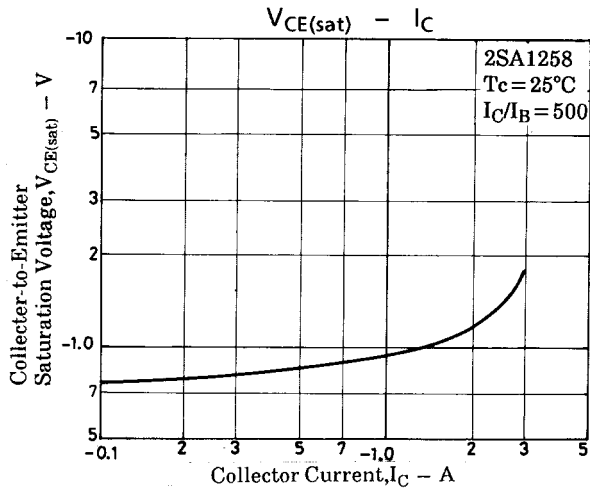
PW = 50 μ s, Duty Cycle \leq 1%
 $500I_{B1} = -500I_{B2} = I_C = 1A$



Electrical Connection



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