

**SANYO**

No.1058D

**2SA1258/2SC3144**

PNP/NPN Epitaxial Planar Silicon Darlington Transistor

**60V/3A for High-Speed Drivers Applications****Features**

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

( ) : 2SA1258

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

			unit
Collector-to-Base Voltage	$V_{CB0}$	(- )70	V
Collector-to-Emitter Voltage	$V_{CE0}$	(- )60	V
Emitter-to-Base Voltage	$V_{EB0}$	(- )5	V
Collector Current	$I_C$	(- )3	A
Collector Current (Pulse)	$I_{CP}$	(- )5	A
Collector Dissipation	$P_C$	1.75	W
		20	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

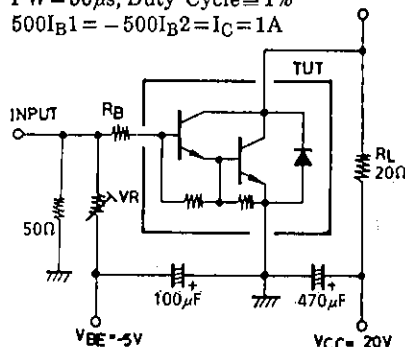
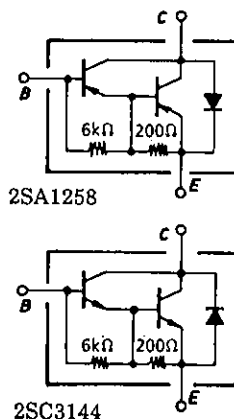
 $T_c = 25^\circ\text{C}$ **Electrical Characteristics at  $T_a = 25^\circ\text{C}$** 

			min	typ	max	unit
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
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1.5\text{A}, I_B = (-)3\text{mA}$	(- )1.0	(- )1.5		V
			0.9			
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)1.5\text{A}, I_B = (-)3\text{mA}$			(- )2.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)5\text{mA}, I_E = 0$	(- )70			V
C-E 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		$\mu\text{s}$
Storage Time	$t_{stg}$	"	(1.3)	1.2		$\mu\text{s}$
Fall Time	$t_f$	"		0.2		$\mu\text{s}$

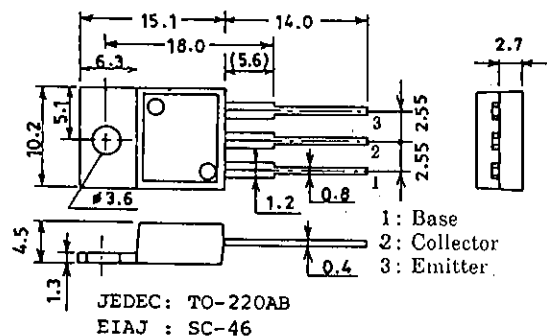
**Specified Test Circuit**

(For PNP, the polarity is reversed.)

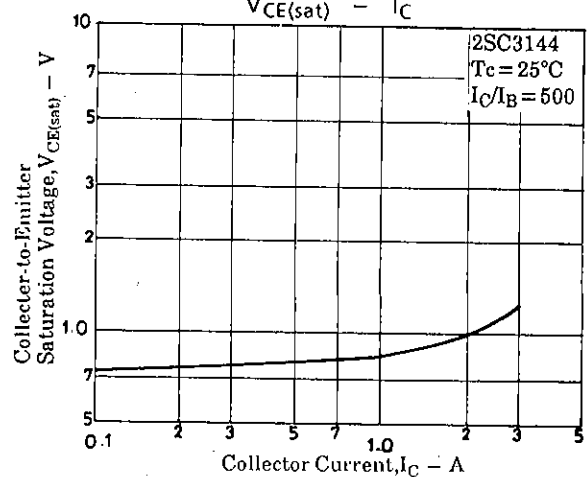
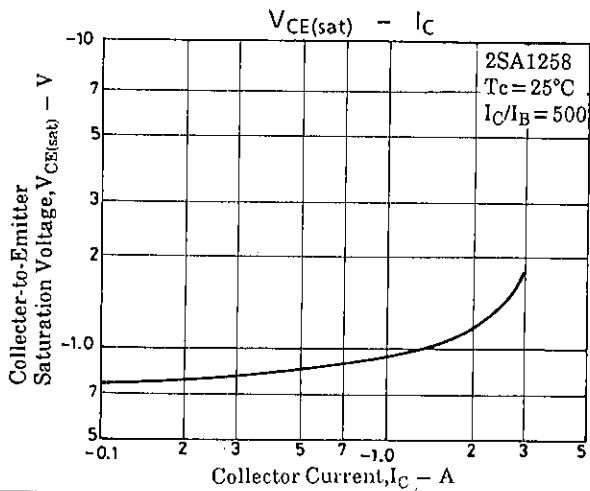
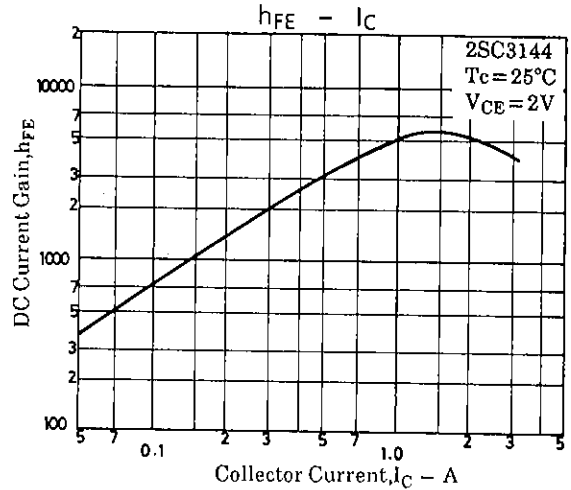
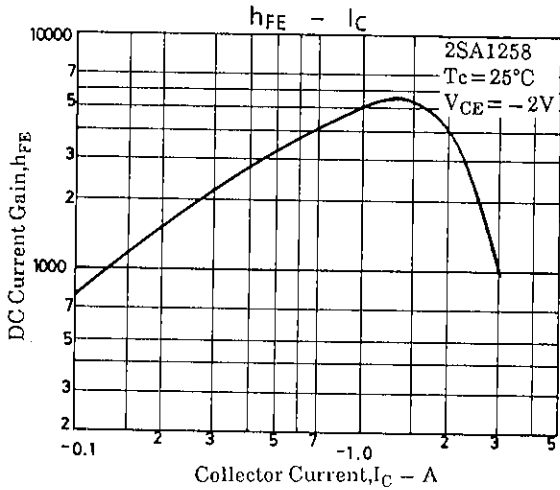
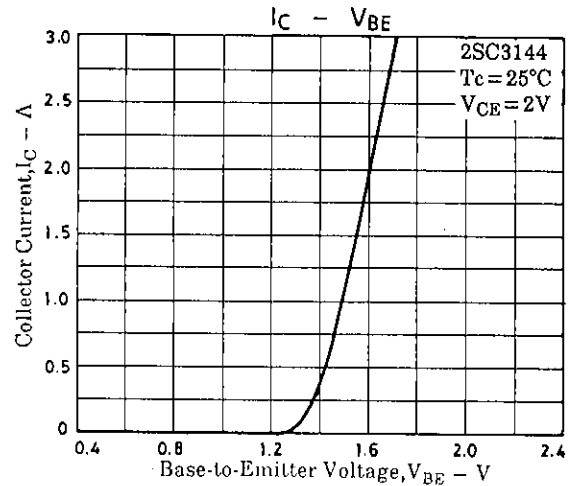
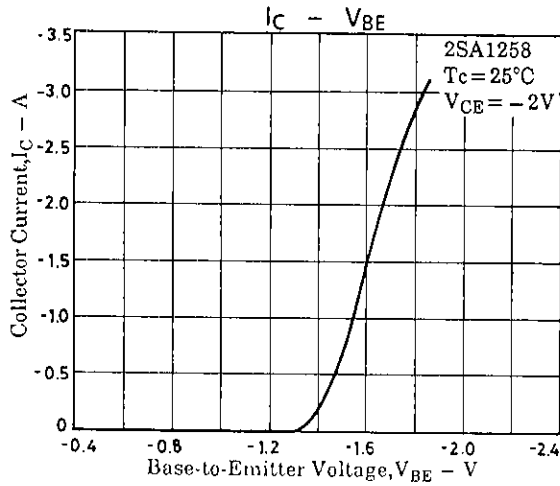
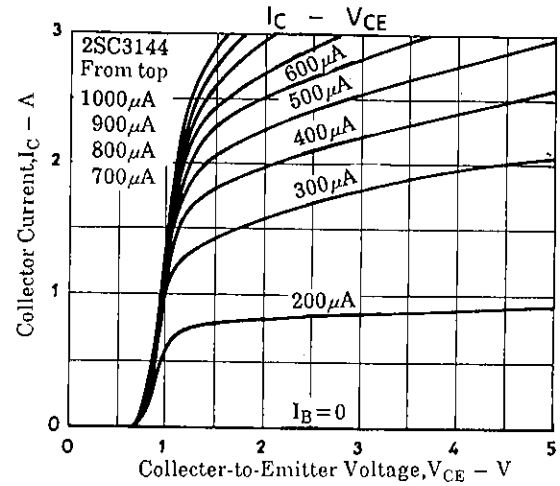
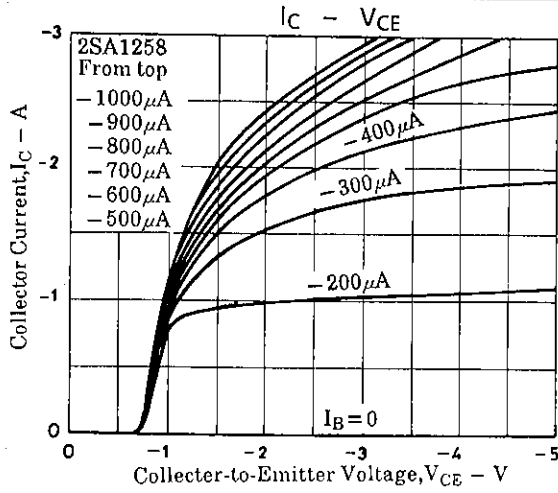
PW = 50  $\mu\text{s}$ , Duty Cycle  $\leq 1\%$   
 $500I_{B1} = -500I_{B2} = I_C = 1\text{A}$

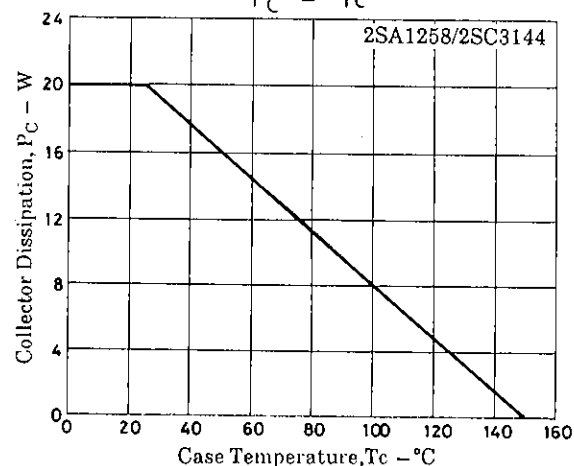
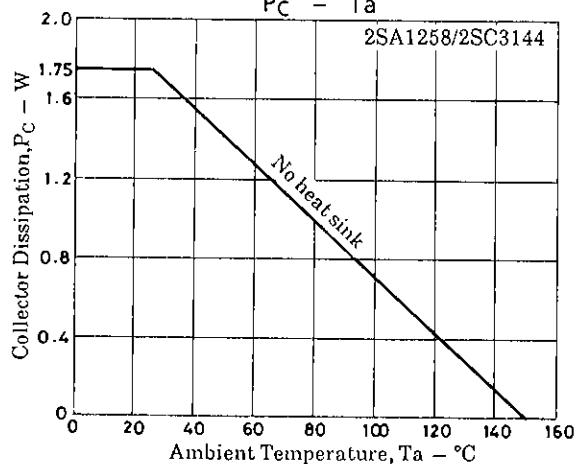
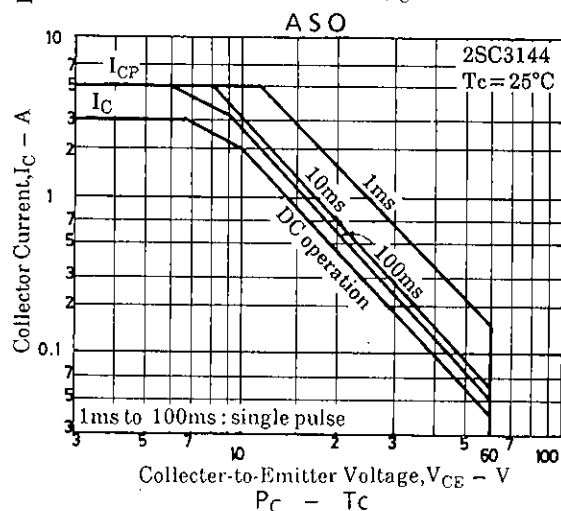
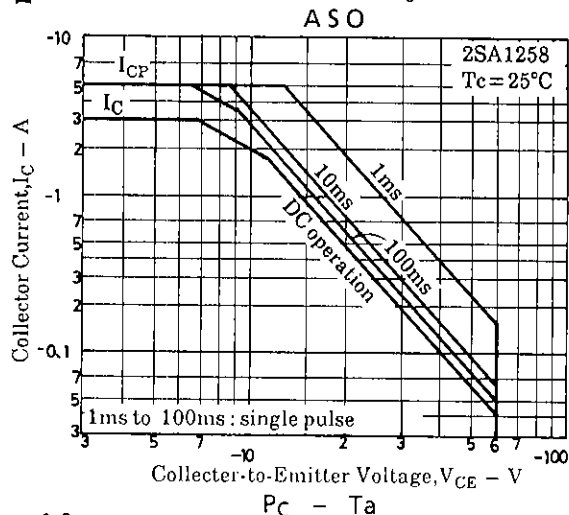
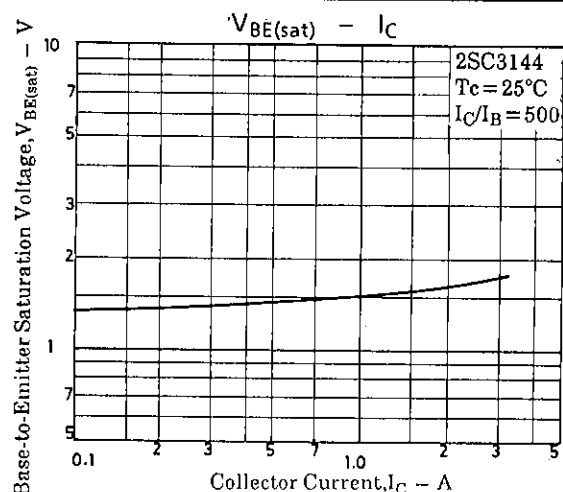
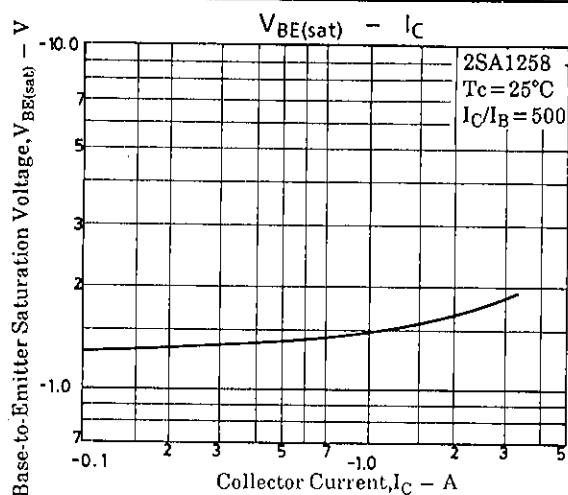
**Electrical Connection****Package Dimensions 2010C**

(unit : mm)

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