

<b>SANYO</b>	No.1057B	<b>2SA1257/2SC3143</b>
		PNP/NPN Epitaxial Planar Silicon Transistors

**High-Voltage Switching, AF Power Amp,  
100W Output Predriver Applications**

**Features**

- Very small-sized package permitting the 2SA1257/2SC3143-applied sets to be made small and slim
- High breakdown voltage ( $V_{CEO} \geq 160V$ )
- Small output capacitance

( ) : 2SA1257

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

			unit
Collector to Base Voltage	$V_{CBO}$	(-) $180$	V
Collector to Emitter Voltage	$V_{CEO}$	(-) $160$	V
Emitter to Base Voltage	$V_{EBO}$	(-) $5$	V
Collector Current	$I_C$	(-) $80$	mA
Collector Current(Pulse)	$I_{CP}$	(-) $150$	mA
Collector Dissipation	$P_C$	$200$	mW
Junction Temperature	$T_j$	$125$	$^\circ C$
Storage Temperature	$T_{stg}$	$-55$ to $+125$	$^\circ C$

**Electrical Characteristics at  $T_a = 25^\circ C$**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)120V, I_E = 0$			(-) $0.1$	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-) $0.1$	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = (-)5V, I_C = (-)10mA$	$60^*$		$270^*$	
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)10mA$		(130)		MHz
				150		
Output Capacitance	$c_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		(2.4)	(3.2)	pF
				2.0	2.8	
Base to Emitter Voltage	$V_{BE}$	$V_{CE} = (-)5V, I_C = (-)10mA$			(-) $1.5$	V
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)30mA, I_B = (-)3mA$			(-) $0.7$	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-) $180$			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-) $160$			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0$	(-) $5$			V
Turn-on Time	$t_{on}$	See specified Test Circuit.	(0.15)	0.18		$\mu s$
Storage Time	$t_{stg}$	"	(0.95)	1.00		$\mu s$
Fall Time	$t_f$	"	(0.15)	0.20		$\mu s$

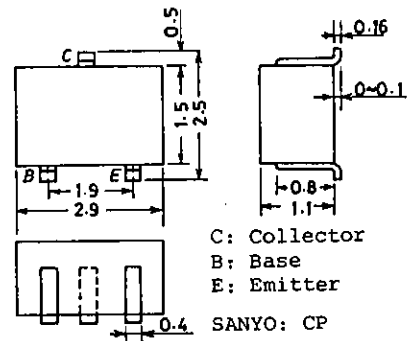
\* : The 2SA1257/2SC3143 are classified by 10mA  $h_{FE}$  as follows :

60	G3	120	90	G4	180	135	G5	270
----	----	-----	----	----	-----	-----	----	-----

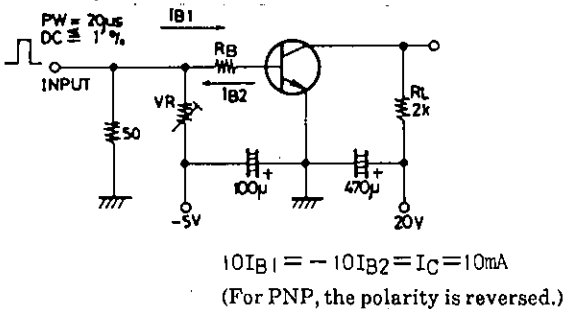
Marking 2SA1257 : G                       $h_{FE}$  rank : 3, 4, 5,  
2SC3143 : K

**Package Dimensions 2018A**

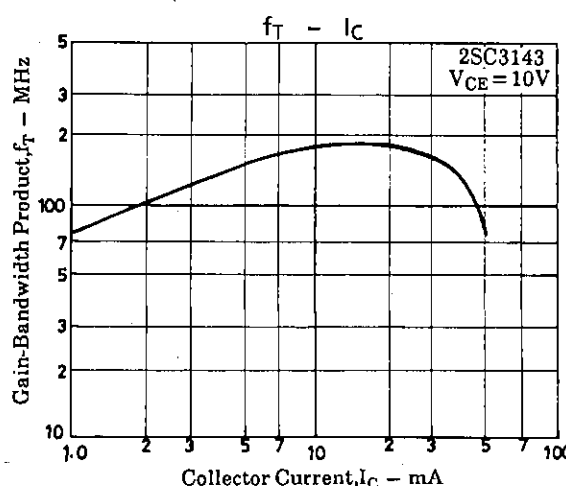
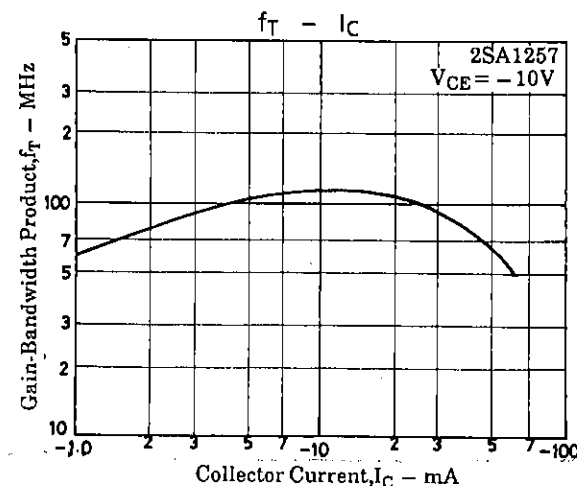
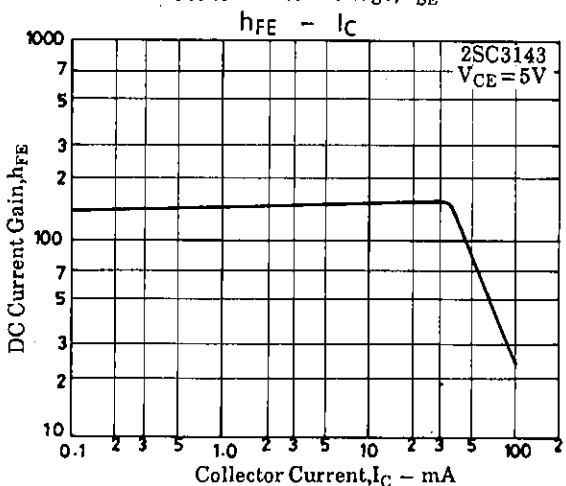
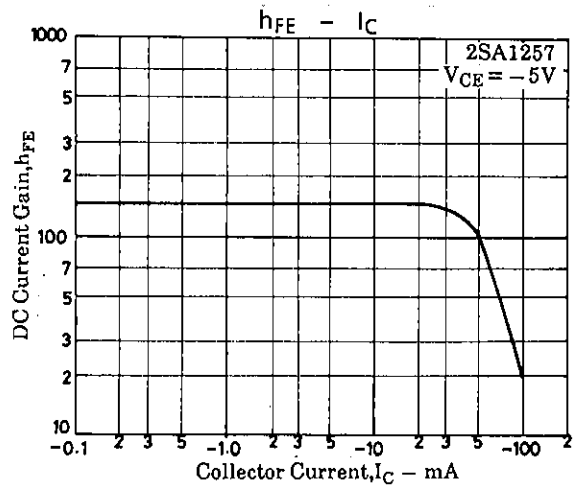
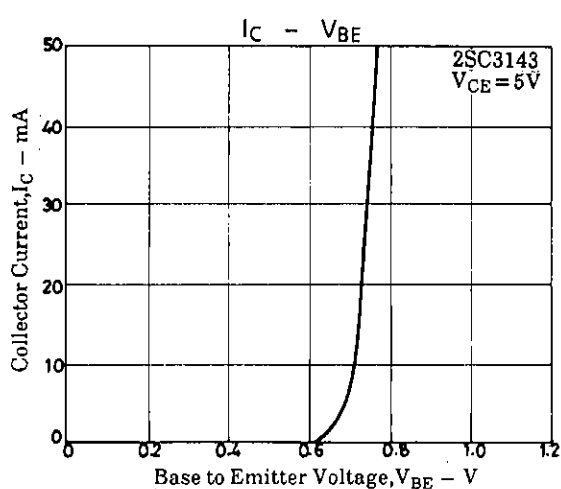
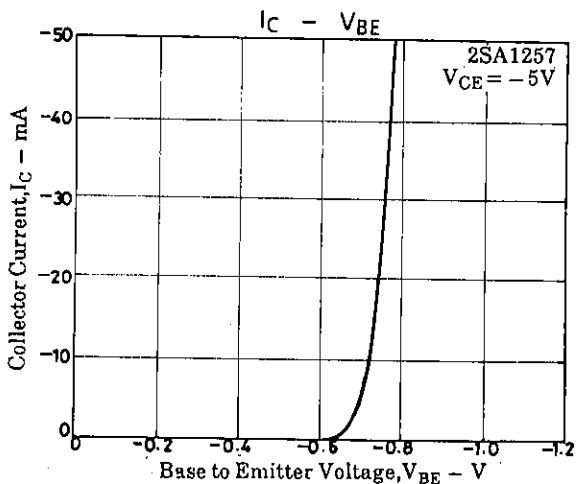
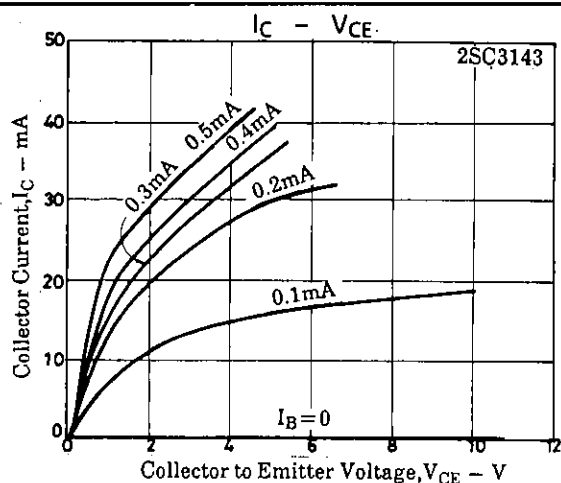
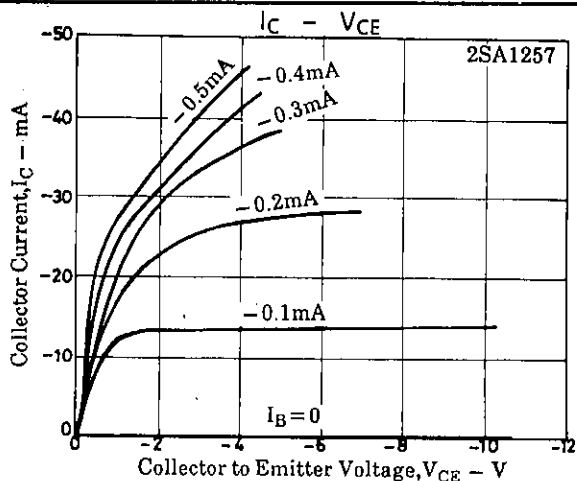
(unit : mm)



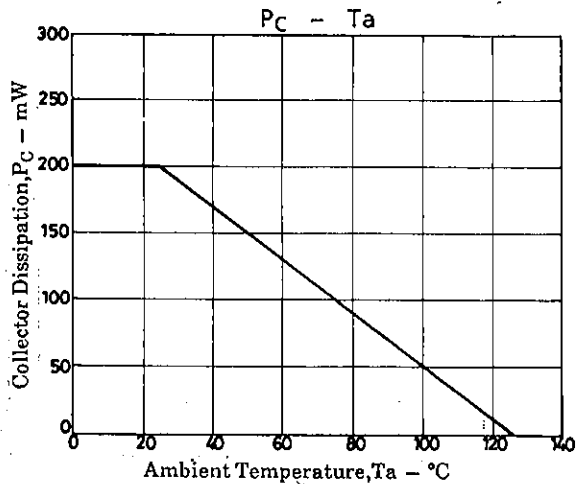
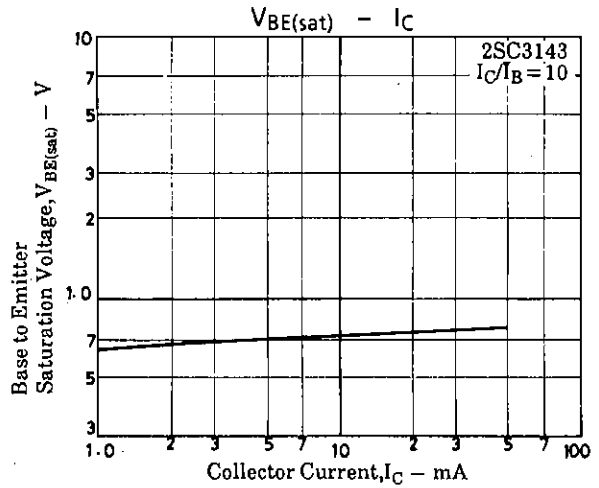
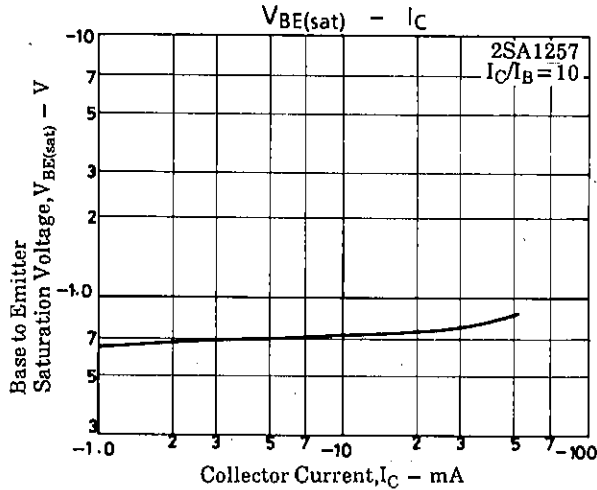
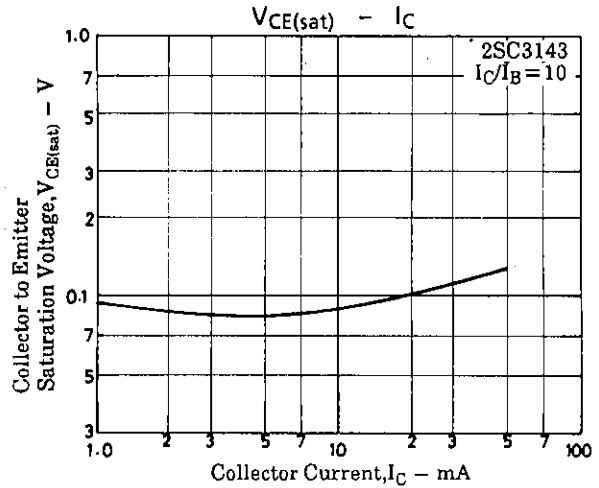
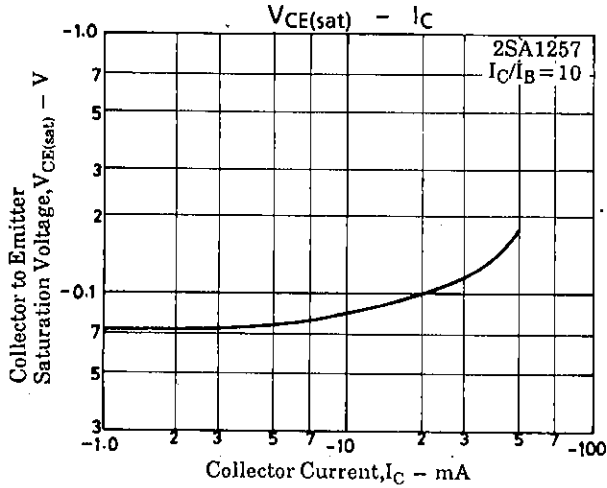
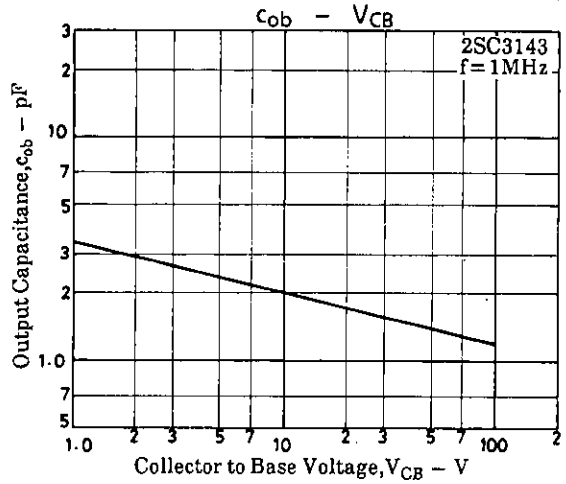
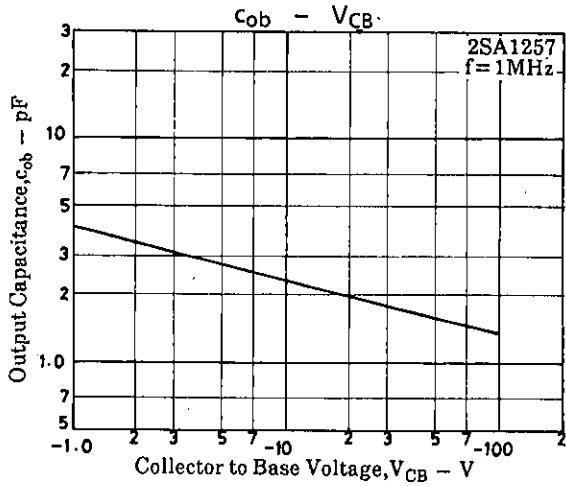
**Switching Time Test Circuit**



Unit (Resistance :  $\Omega$ , Capacitance : F)



2SA1257/2SC3143



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.