

<b>SANYO</b>	No.2535	2SA1606/2SC4159
		PNP/NPN Epitaxial Planar Type Silicon Transistors <b>HIGH-VOLTAGE SWITCHING, AF 100W DRIVER APPLICATIONS</b>

**Applications**

- High-voltage switching, AF power amp, 100W output predrivers

**Features**

- Micaless package facilitating mounting

( ): 2SA1606

**Absolute Maximum Ratings at Ta=25°C**

			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	(-)180	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>	(-)160	V
Emitter-to-Base Voltage	V <sub>EBO</sub>	(-)6	V
Collector Current	I <sub>C</sub>	(-)1.5	A
Peak Collector Current	i <sub>cp</sub>	(-)3	A
Collector Dissipation	P <sub>C</sub>	15	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

Tc=25°C

**Electrical Characteristics at Ta=25°C**

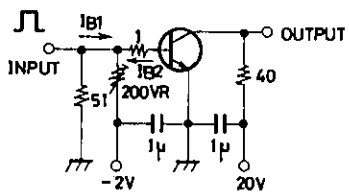
			min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =(-)120V, I <sub>E</sub> =0			(-)10	µA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(-)10	µA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)300mA	60*		200*	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)50mA		100		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		(30)23		pF
Base to Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)10mA			(-)1.5	V
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)500mA, I <sub>B</sub> =(-)50mA		(-0.5)		V
				0.3		V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =(-)1mA, I <sub>E</sub> =0		(-)180		V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =(-)1mA, R <sub>BE</sub> =∞		(-)160		V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =(-)1mA, I <sub>C</sub> =0		(-)6		V

Continued on next page.

\*: The 2SA1606/2SC4159 are classified by 300mA h<sub>FE</sub> as follows:

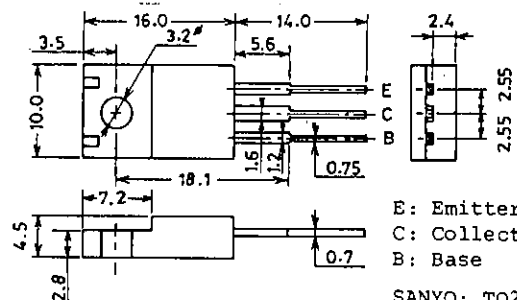
60	D	120		100	E	200
----	---	-----	--	-----	---	-----

**Switching Test Circuit**



10I<sub>B1</sub> = -10I<sub>B2</sub> = I<sub>C</sub> = 0.5A  
 PW = 20µs  
 For PNP, the polarity is reversed.  
 Unit (resistance: Ω, capacitance: F)

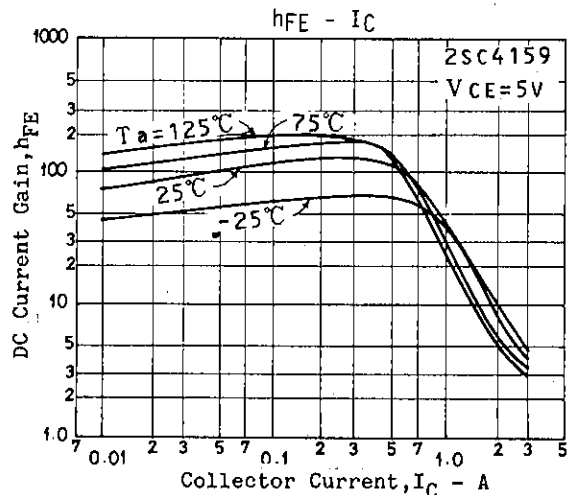
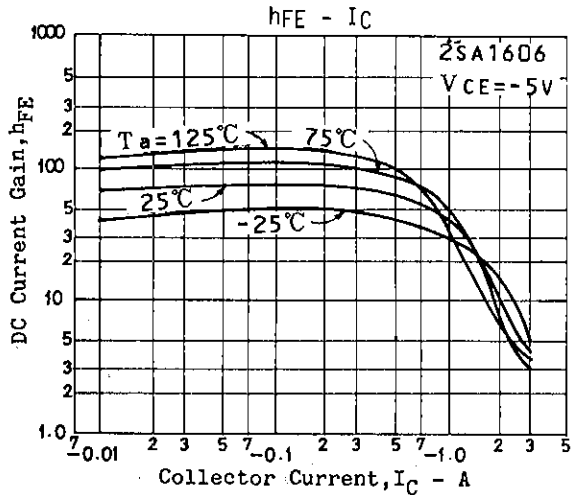
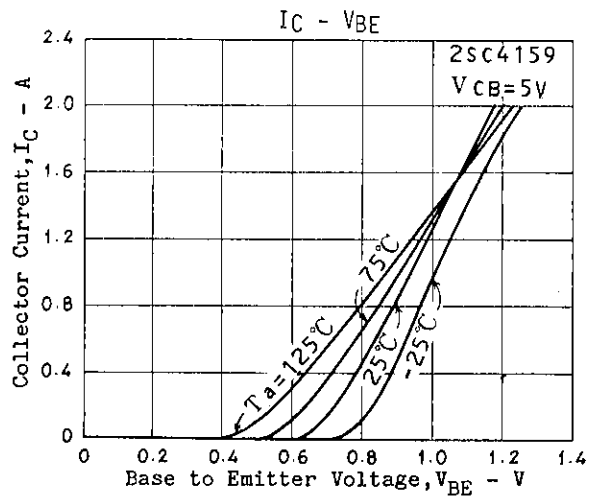
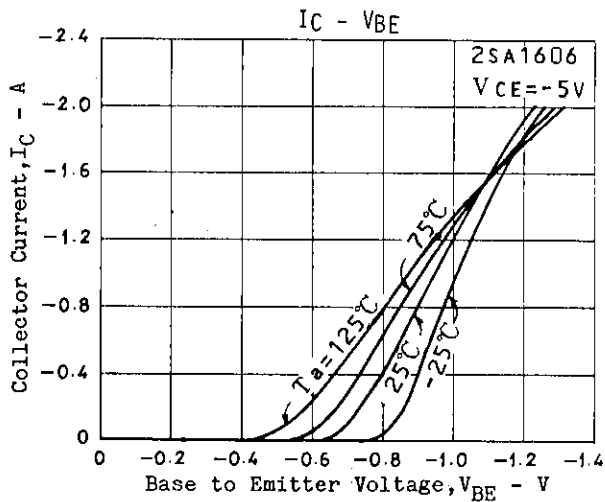
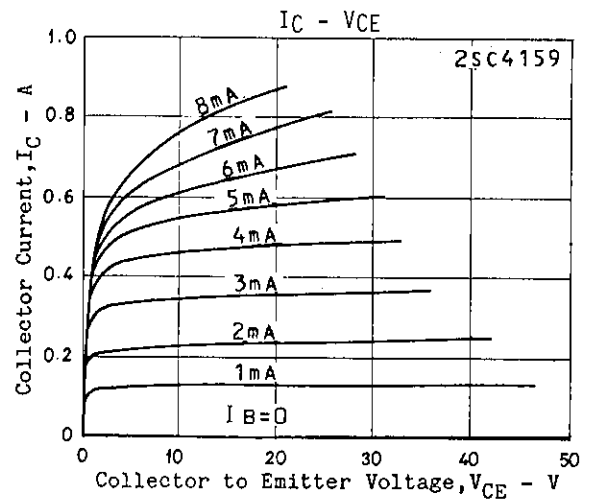
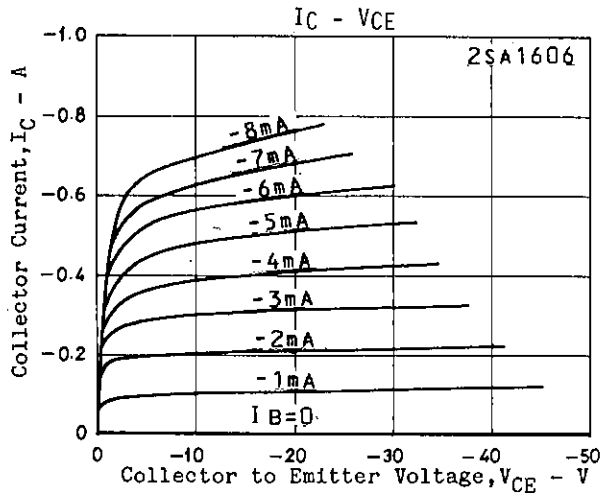
**Package Dimensions 2041 (unit:mm)**



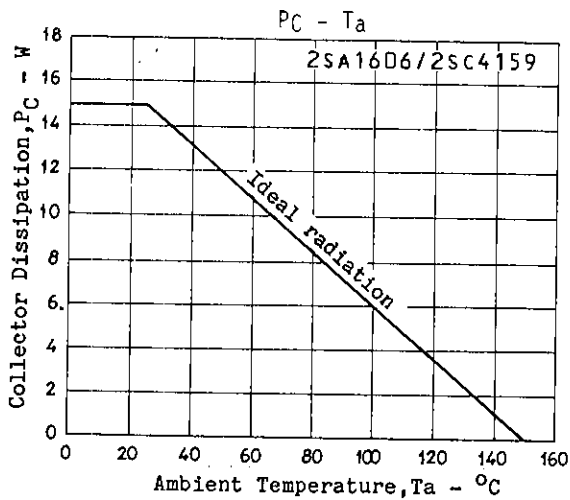
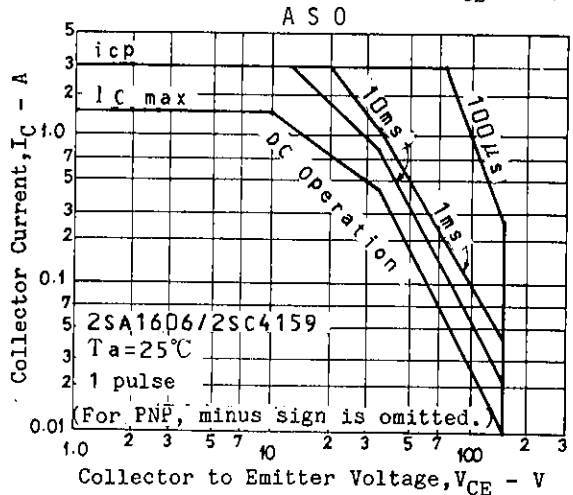
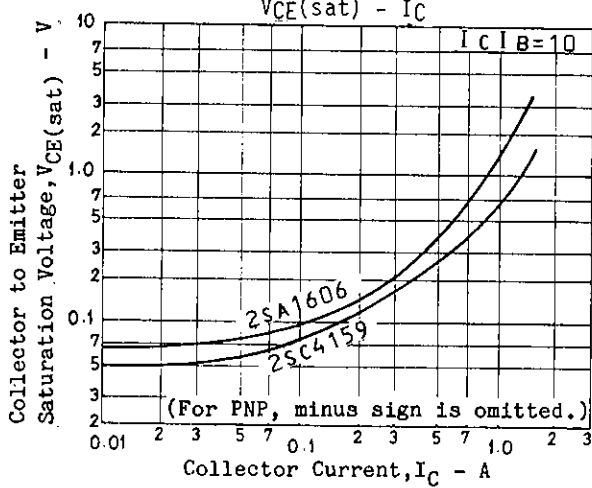
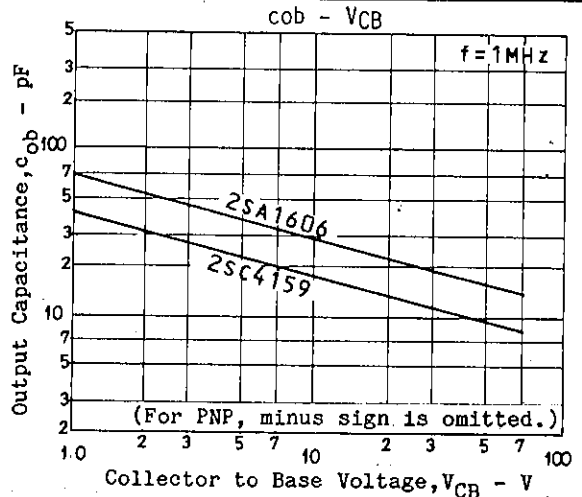
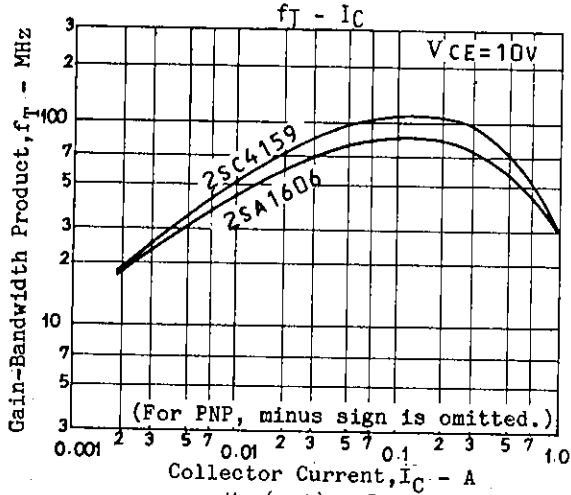
E: Emitter  
 C: Collector  
 B: Base  
 SANYO: TO220ML

Continued from preceding page.

			min	typ	max	unit
Turn-on Time	$t_{on}$	See specified Test Circuit.		(0.29)		$\mu s$
Fall Time	$t_f$	"		0.15		$\mu s$
Storage Time	$t_{stg}$	"		(0.19)		$\mu s$
				0.48		$\mu s$
				(0.48)		$\mu s$
				0.81		$\mu s$



2SA1606/2SC4159



■ 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.