

<b>SANYO</b>	No.2089B	<b>2SA1477/2SC3787</b>
		PNP/NPN Epitaxial Planar Silicon Transistors
<b>160V/140mA Switching Applications</b>		

**Applications**

- Predrivers for 100W power amplifiers.

**Features**

- Adoption of FBET process.
- Excellent linearity of  $h_{FE}$ .
- Small Cob.
- Plastic-covered heat sink facilitating high-density mounting (TO126ML package).

( ) : 2SA1477

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

			unit
Collector-to-Base Voltage	$V_{CB0}$	(- )180	V
Collector-to-Emitter Voltage	$V_{CE0}$	(- )160	V
Emitter-to-Base Voltage	$V_{EB0}$	(- )5	V
Collector Current	$I_C$	(- )140	mA
Collector Current (Pulse)	$I_{CP}$	(- )200	mA
Collector Dissipation	$P_C$	1.3	W
		$T_c = 25^\circ\text{C}$	
		10	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

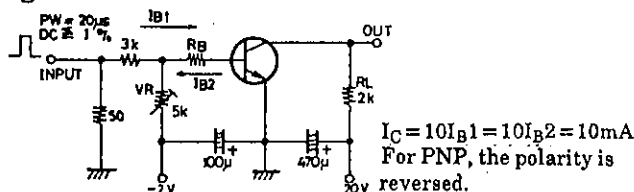
**Electrical Characteristics at  $T_a = 25^\circ\text{C}$**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)120\text{V}, I_E = 0$		(- )100		nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$		(- )100		nA
DC Current Gain	$h_{FE}^*$	$V_{CE} = (-)5\text{V}, I_C = (-)10\text{mA}$	100		400	
Gain Bandwidth Product	$f_T$	$V_{CE} = (-)10\text{V}, I_C = (-)10\text{mA}$		150		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(4.0)		pF
				3.0		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$		(- )140	(- )400	mV
				70	300	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$			1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	(- )180			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	(- )160			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu\text{A}, I_C = 0$	(- )5			V
Rise Time	$t_{on}$	See specified Test Circuit.		0.1		$\mu\text{s}$
Storage Time	$t_{stg}$	"		1.5		$\mu\text{s}$
Fall Time	$t_f$	"		0.1		$\mu\text{s}$

※ : The 2SA1477/2SC3787 are classified by 10mA  $h_{FE}$  as follows :

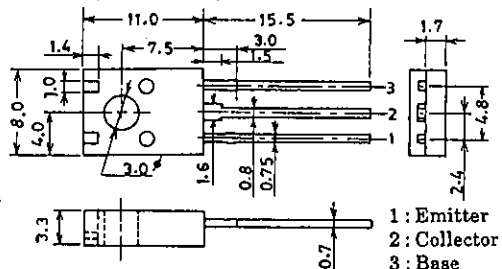
100 R	200	140 S	280	200 T	400
-------	-----	-------	-----	-------	-----

**Switching Time Test Circuit**



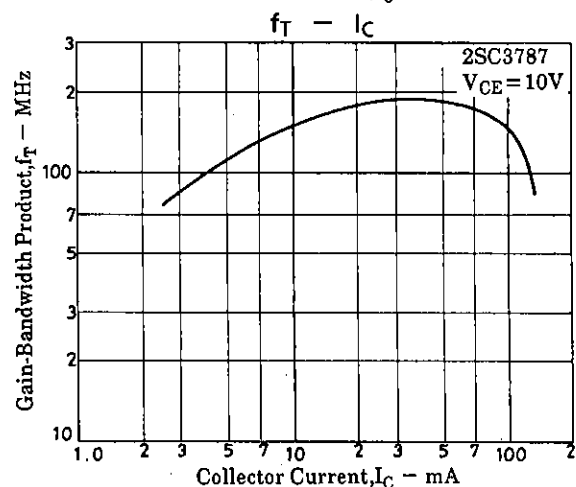
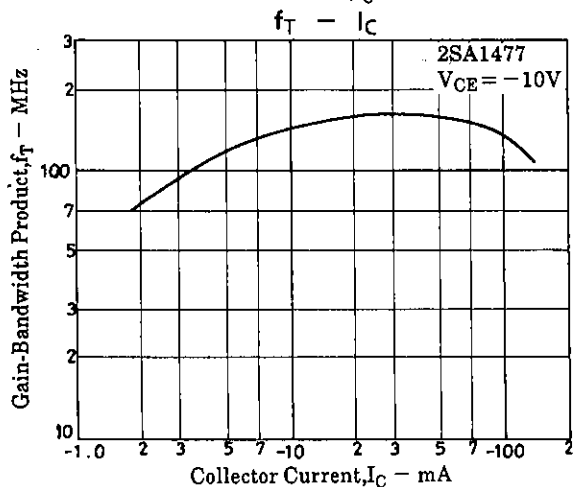
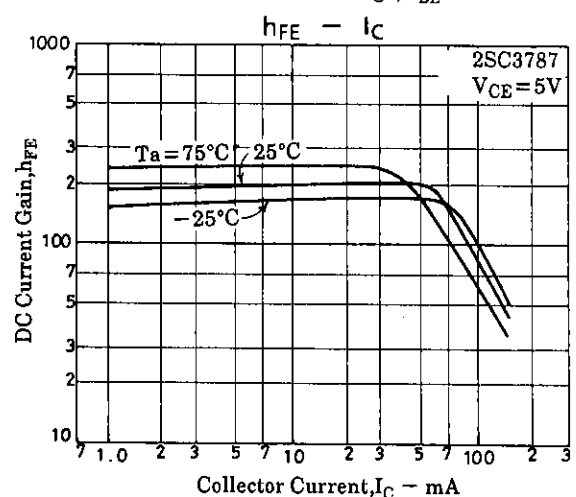
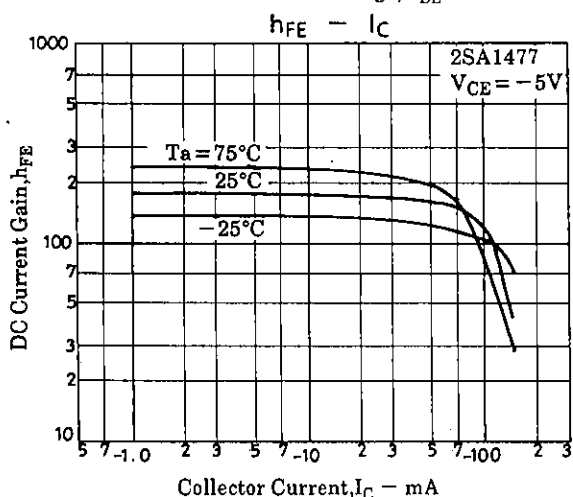
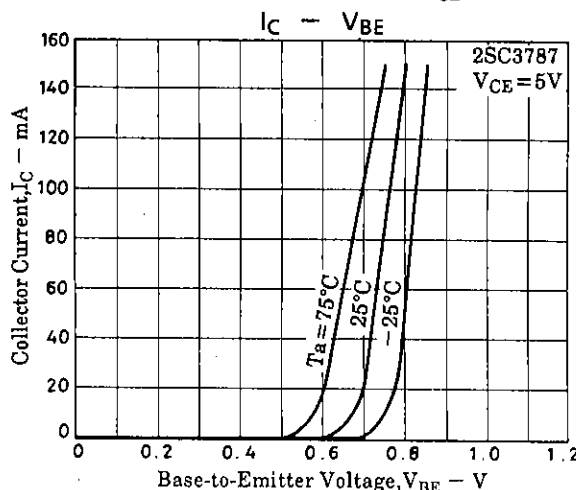
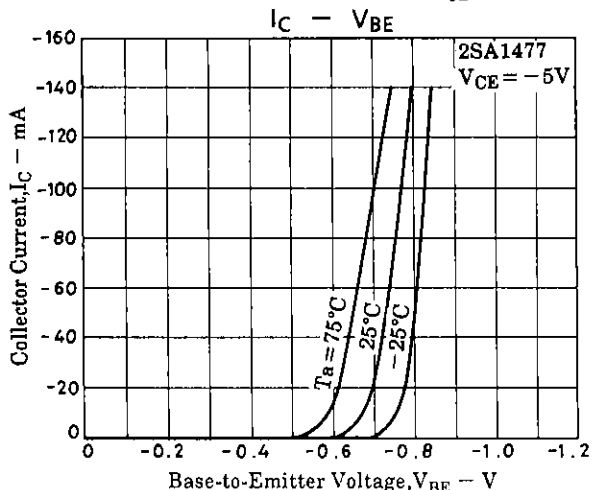
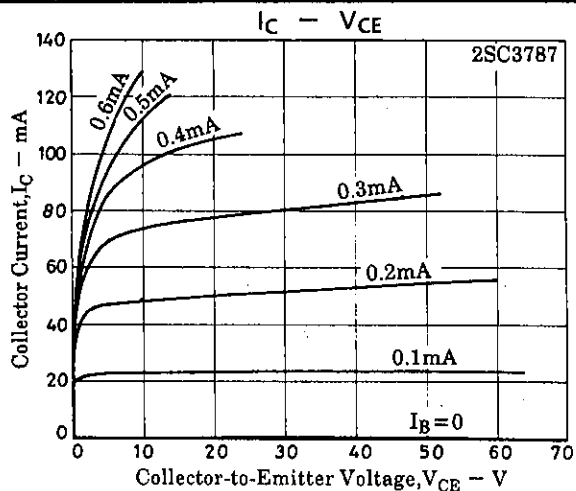
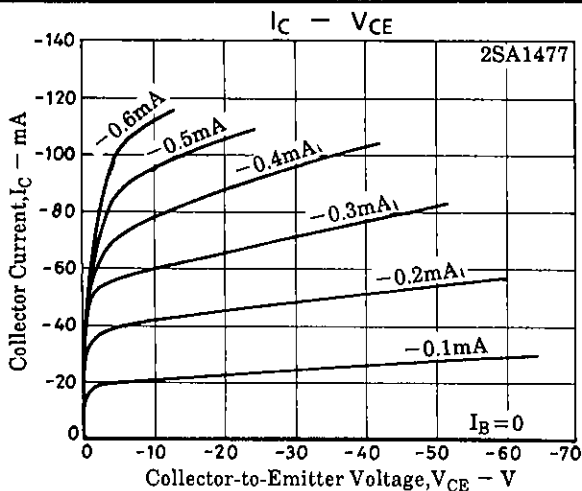
Unit (Resistance :  $\Omega$ , Capacitance : F)

**Package Dimensions 2042B (unit : mm)**

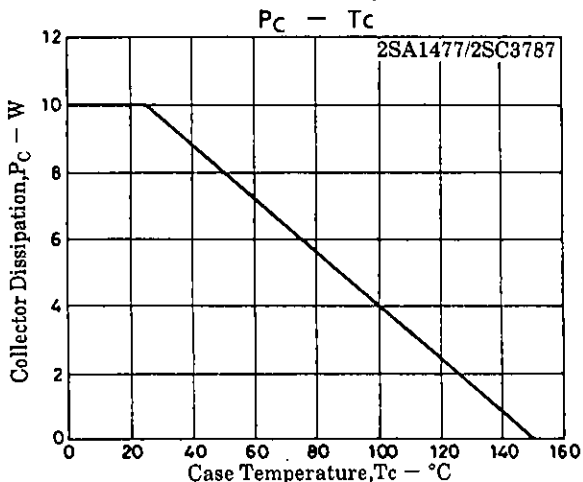
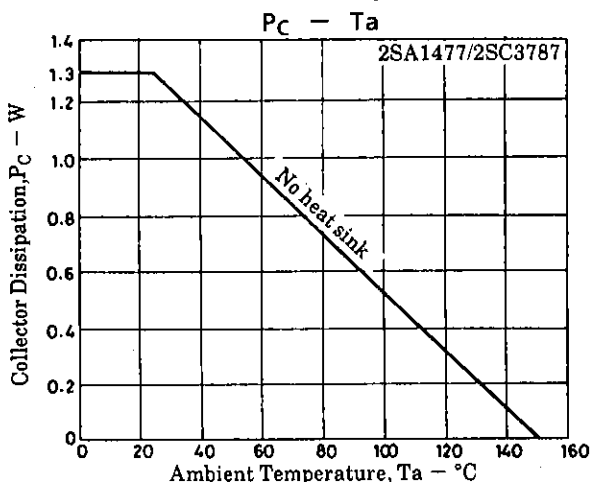
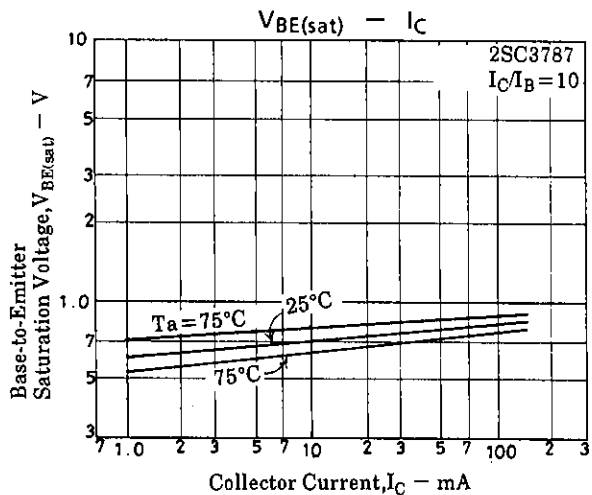
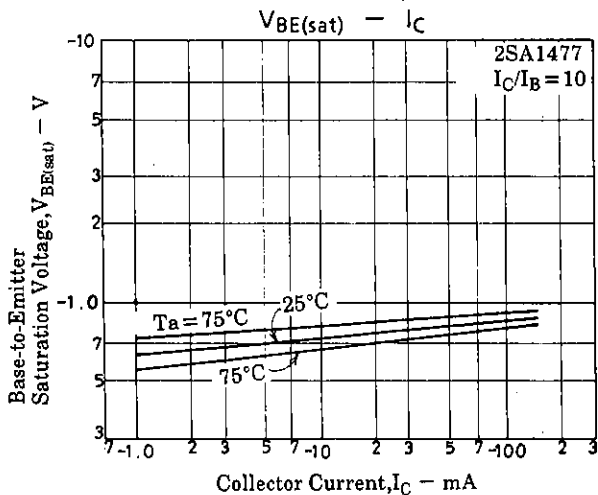
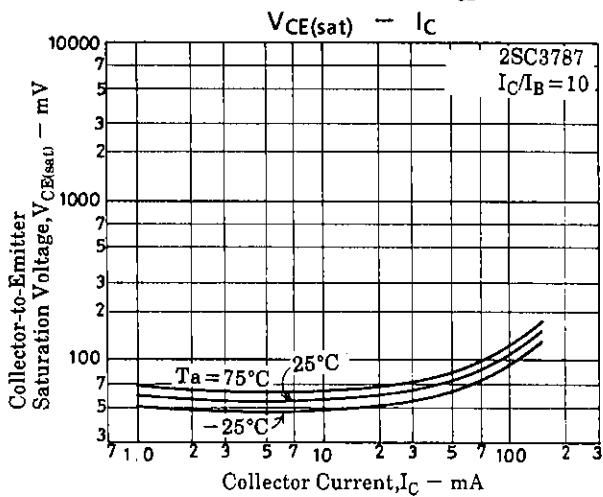
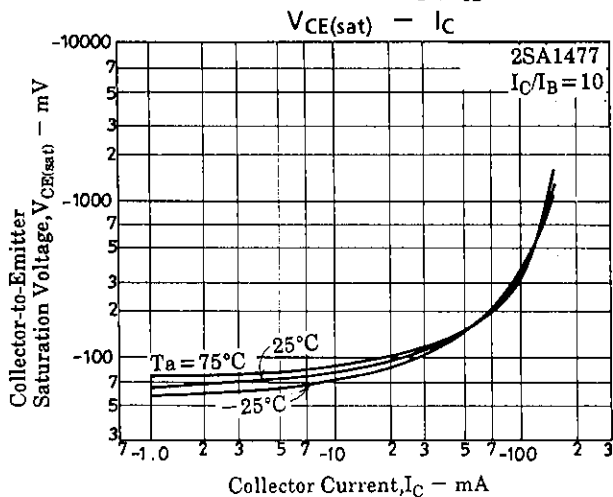
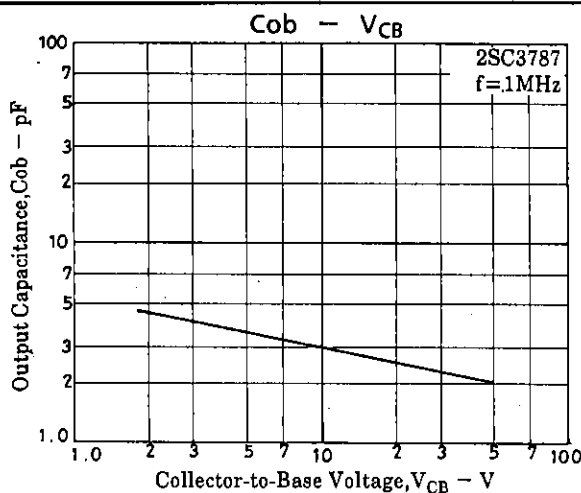
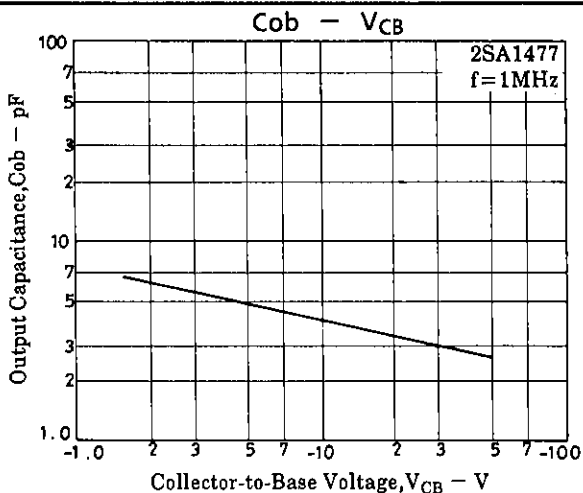


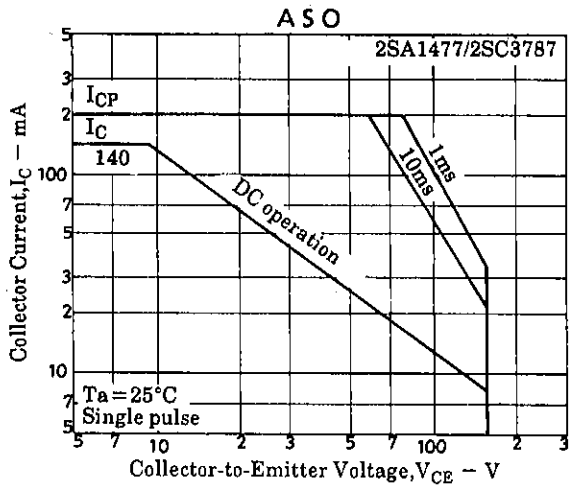
SANYO: TO126ML

**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**  
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN



2SA1477/2SC3787





- 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.

This catalog provides information as of January, 1996. Specifications and information herein are subject to change without notice.