

**SANYO**

No.3972

**2SA1813**

PNP Epitaxial Planar Silicon Transistor

Low-Frequency General-Purpose Amp, Driver, Muting Circuit Applications

**Features**

- Very small-sized package permitting 2SA1813-applied sets to be made smaller and slimmer.
- Adoption of FBET process.
- High DC current gain ( $h_{FE} = 500$  to  $1200$ ).
- Low collector-to-emitter saturation voltage ( $V_{CE(sat)} \leq 0.3V$ ).
- High  $V_{EBO}$  ( $V_{EBO} \geq 15V$ ).

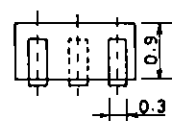
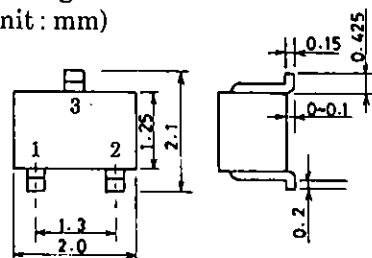
**Absolute Maximum Ratings at  $T_a = 25^\circ C$** 

			unit
Collector-to-Base Voltage	$V_{CBO}$	-30	V
Collector-to-Emitter Voltage	$V_{CEO}$	-25	V
Emitter-to-Base Voltage	$V_{EBO}$	-15	V
Collector Current	$I_C$	-150	mA
Collector Current (Pulse)	$I_{CP}$	-300	mA
Base Current	$I_B$	-30	mA
Collector Dissipation	$P_C$	200	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

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

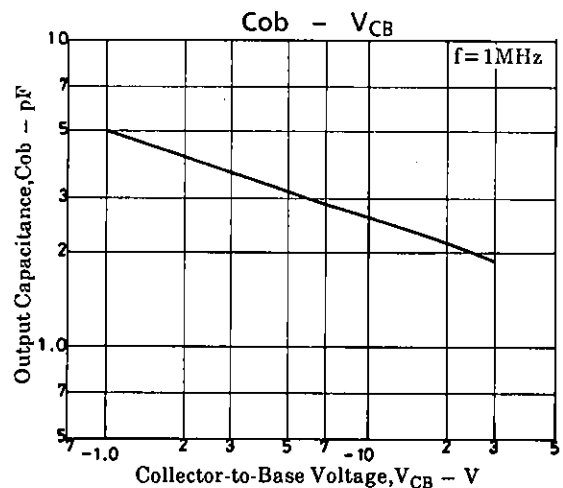
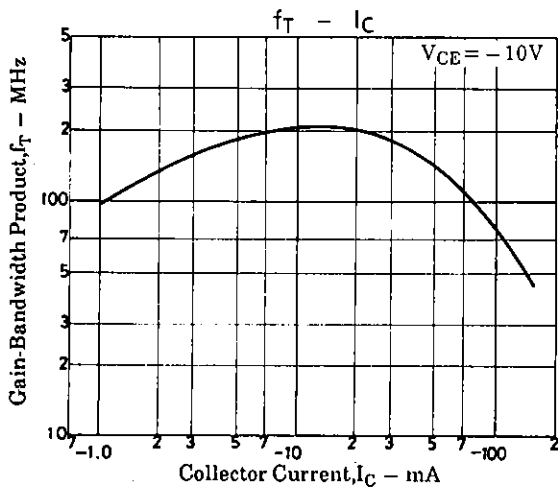
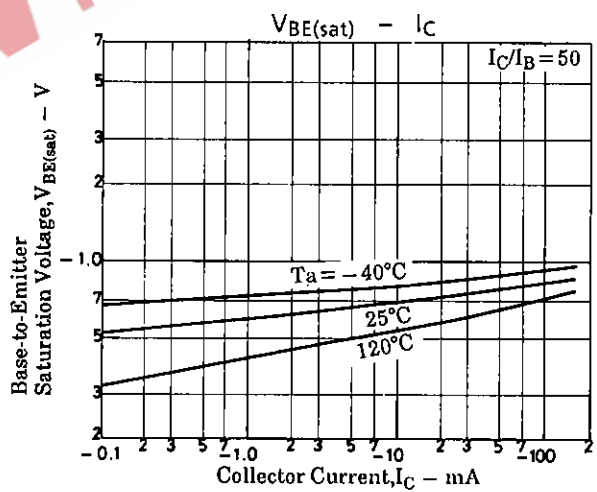
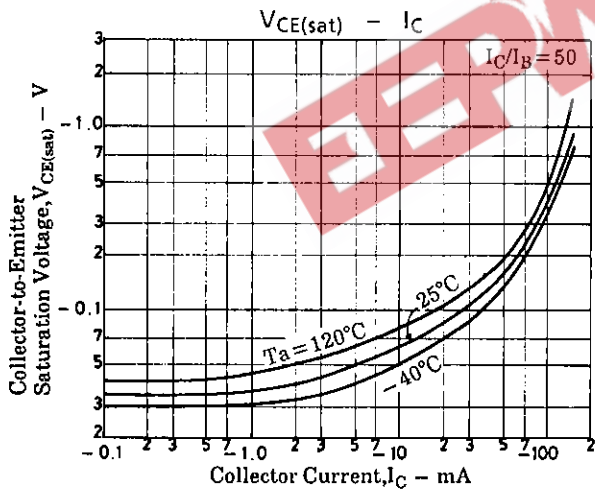
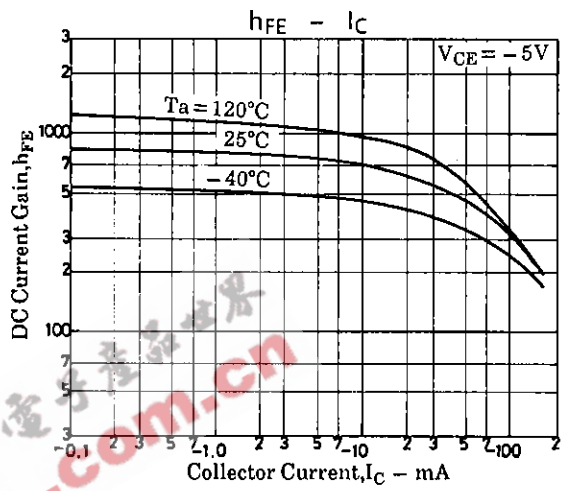
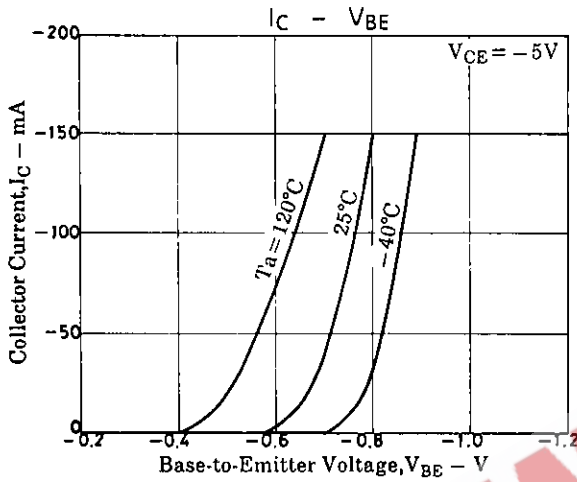
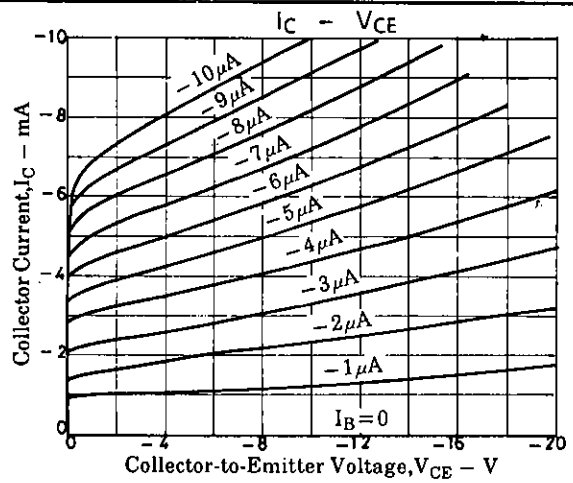
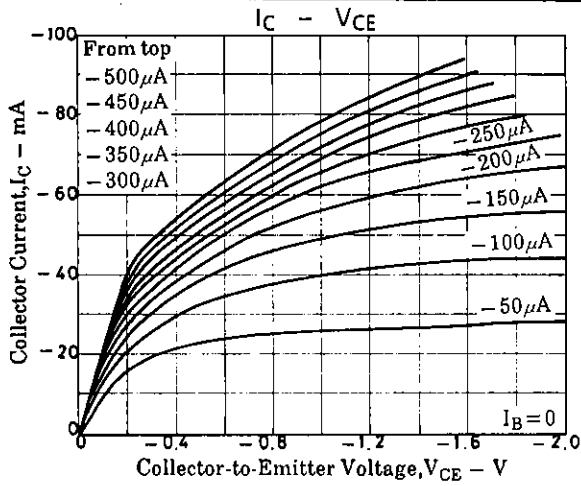
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = -20V, I_E = 0$			-0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -10V, I_C = 0$			-0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = -5V, I_C = -1mA$	500	800	1200	
Gain-Bandwidth Product	$f_T$	$V_{CE} = -10V, I_C = -10mA$		210		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = -10V, f = 1MHz$		2.6		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = -50mA, I_B = -1mA$	-0.15		-0.3	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = -50mA, I_B = -1mA$	-0.78		-1.1	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-30			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-25			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-15			V

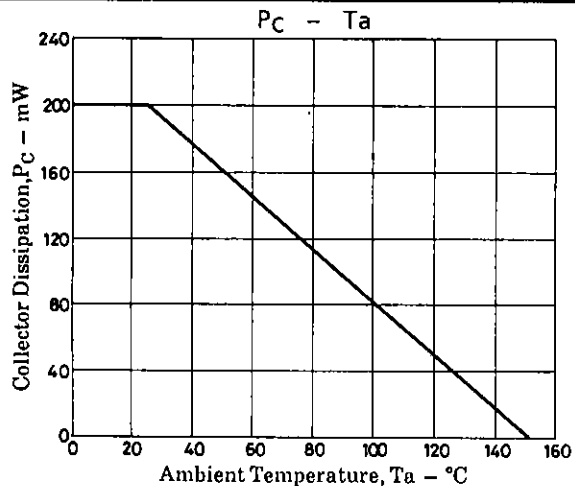
Marking: KS

**Package Dimensions 2059A**  
(unit: mm)1: Base  
2: Emitter  
3: Collector

SANYO:MCP

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