2SA1338, 2SC3392

T-37-15
T-35-11

2018A

PNP/NPN Epitaxial Planar Silicon Transistors

High-Speed Switching Applications

E1421A

Features

- Adoption of FBET process
- High breakdown voltage: V_{CEO}=(-)50V
- Large current capacity and high f_T
- Very small-sized package permitting sets to be small-sized, slim

( ): 2SA1338

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V_{CBO}	(-)60	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)5	V
Collector Current	I_C	(-)500	mA
Peak Collector Current	i_{cp}	(-)800	mA
Collector Dissipation	P_C	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics at Ta=25°C

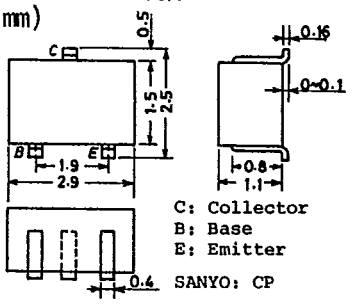
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)40V, I_E=0			(-)0.1	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)4V, I_C=0			(-)0.1	uA
DC Current gain	h_{FE}	V_{CE}=(-)5V, I_C=(-)10mA	100*		560*	
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)50mA		300 (200)		MHz
Output Capacitance	cob	V_{CB}=(-)10V, f=1MHz		3.7 (5.6)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(-)100mA, I_B=(-)10mA		0.1 (0.15)	0.3 (0.4)	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=(-)100mA, I_B=(-)10mA		0.8	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10uA, I_E=0	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)100uA, R_{BE}=∞	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)10uA, I_C=0	(-)5			V
Turn-on Time	ton	V_{CC}=20V,		70(70)		ns
Storage Time	t_{stg}	I_C=10I_{B1}=-10I_{B2}=100mA		400(400)		ns
Fall Time	t_f			70(50)		ns

* : The 2SA1338/2SC3392 are classified by 10mA h_{FE} as follows:

2SA1338/ 2SC3392	100	4	200	140	5	280
	200	6	400	280	7	560

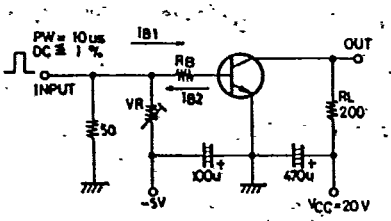
(Note) 2SA1338 marking:AL/2SC3392 marking:AY
h_{FE} rank :4,5,6,7

Case Outline 2018A
(unit:mm)

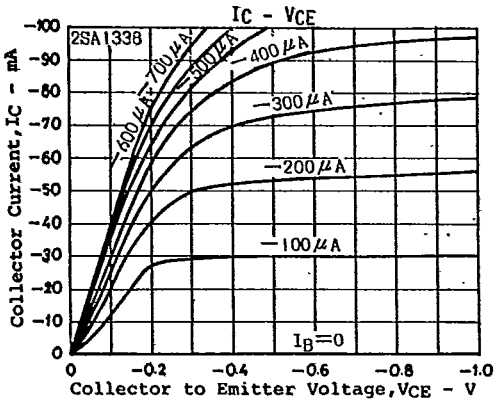


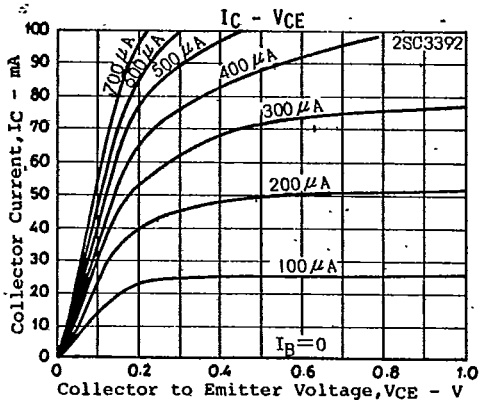
C: Collector
B: Base
E: Emitter
SANYO: CP

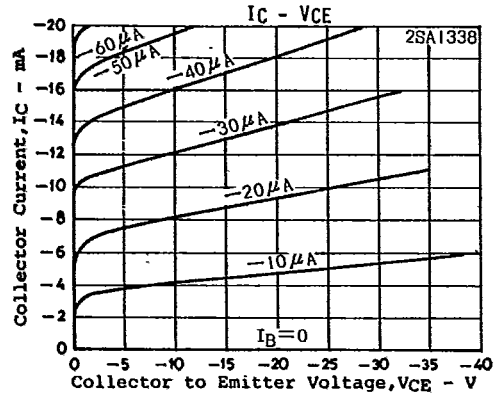
Switching Time Test Circuit

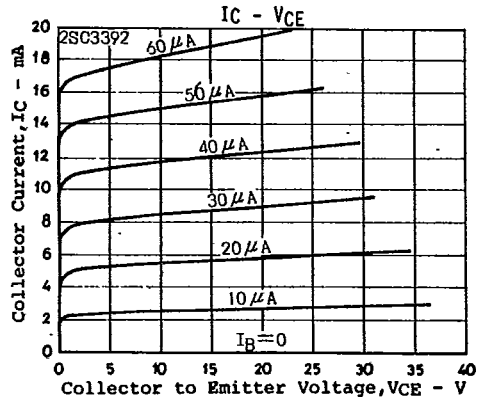


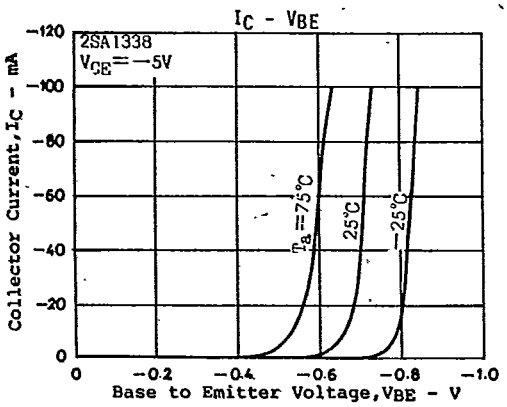
(For PNP, the polarity is reversed.)

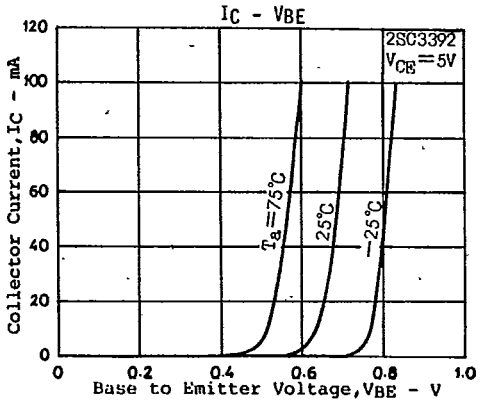




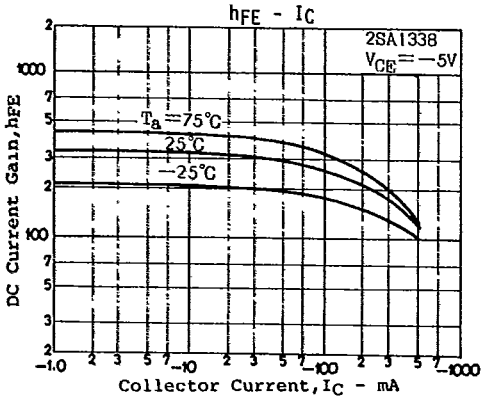




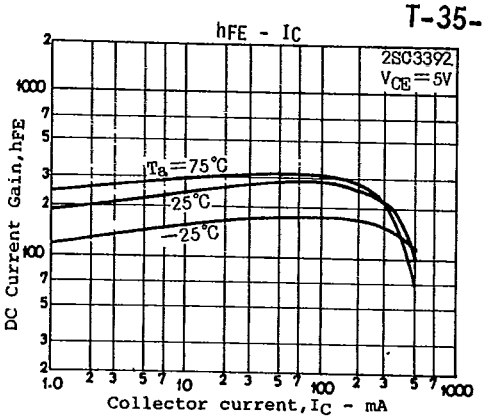




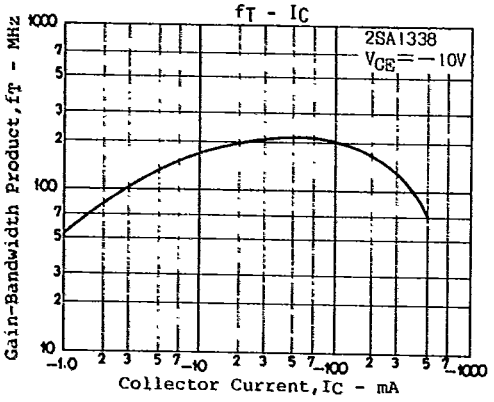
hFE - IC



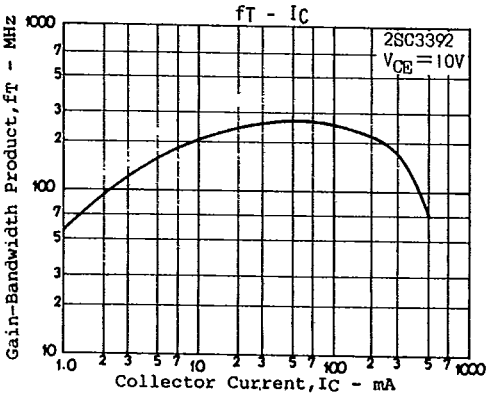
hFE - IC



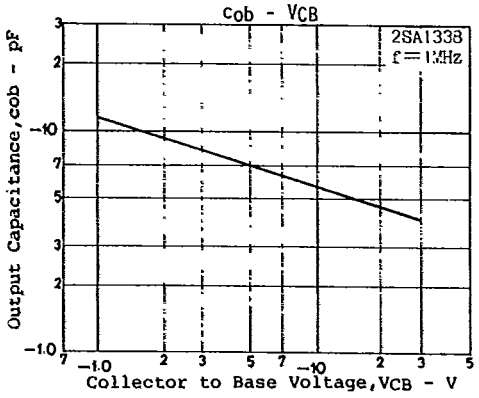
fT - IC



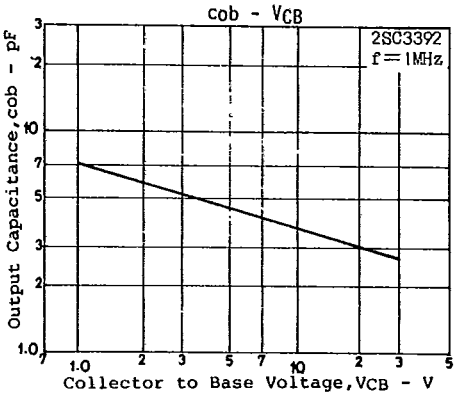
fT - IC



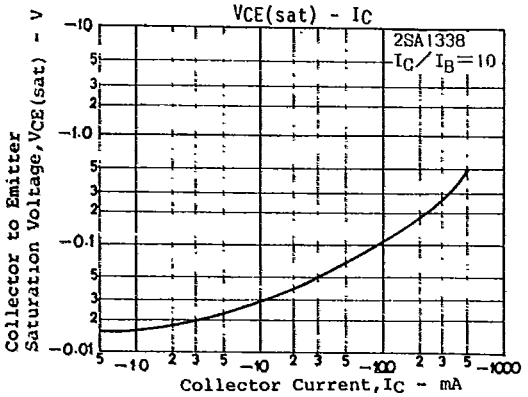
Cob - VCB



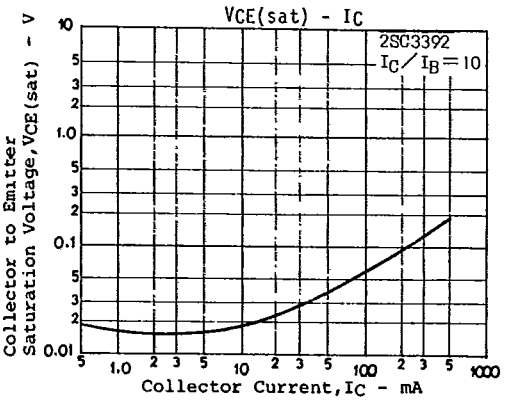
cob - VCB



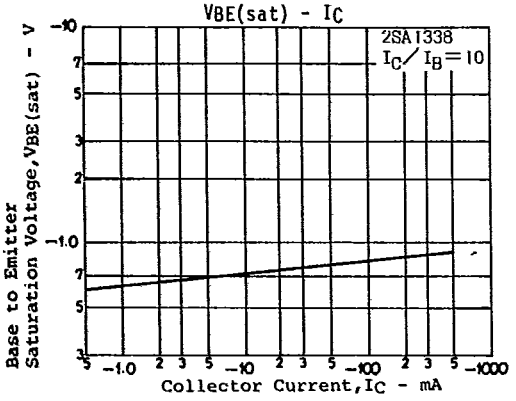
VCE(sat) - IC



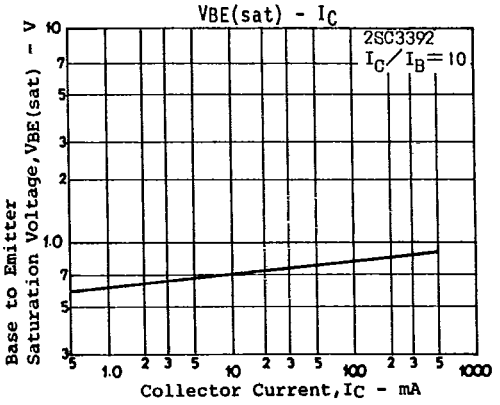
VCE(sat) - IC



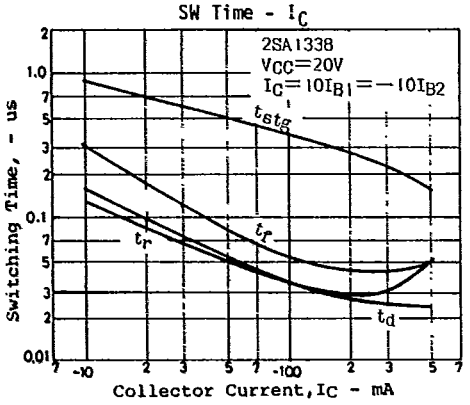
VBE(sat) - IC



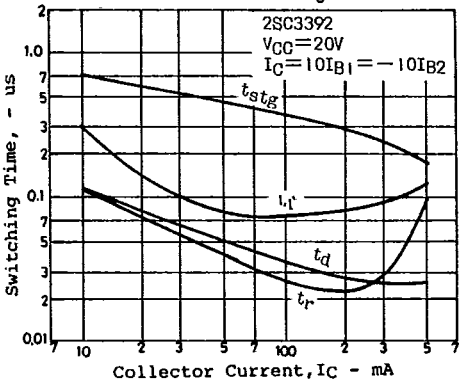
VBE(sat) - IC



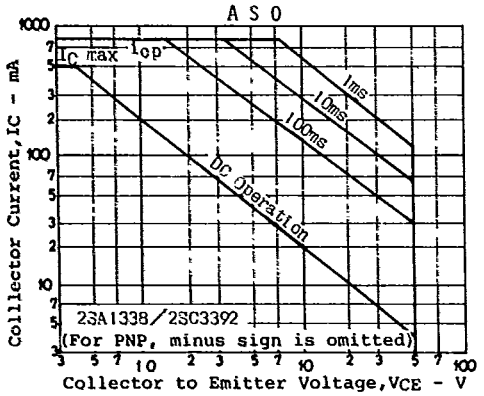
SW Time - IC



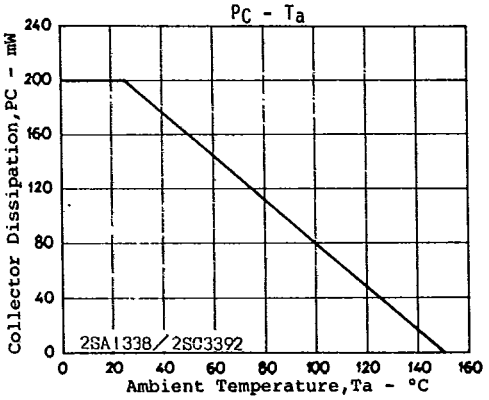
SW Time - IC



A S O



PC - Ta



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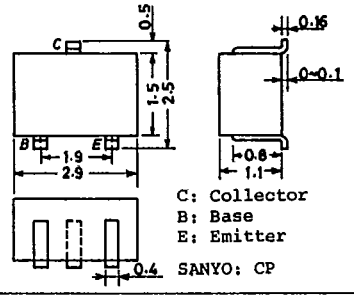
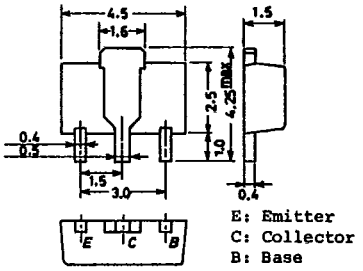
CASE OUTLINES OF SURFACE MOUNT TRANSISTORS

- All of Sanyo surface mount transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

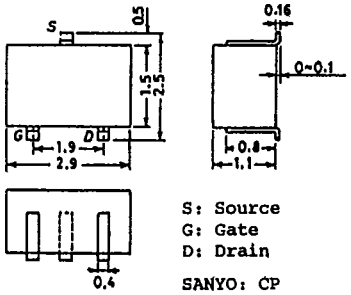
Case Outline—[2018A] unit: mm



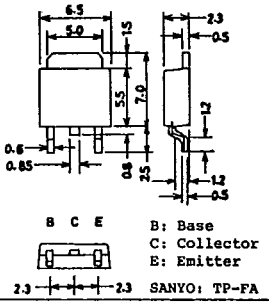
Case Outline—[2038] unit: mm



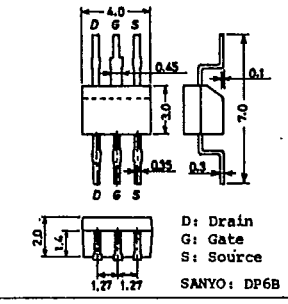
Case Outline—[2024A] unit: mm



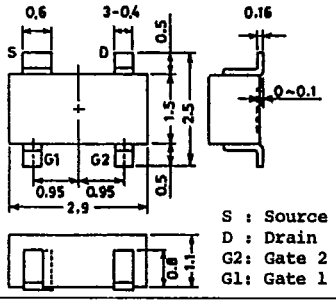
Case Outline—[2044] unit: mm



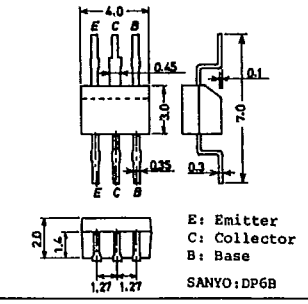
Case Outline—[2028A] unit: mm



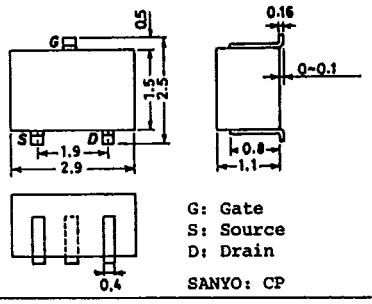
Case Outline—[2046] unit: mm



Case Outline—[2030A] unit: mm



Case Outline—[2050] unit: mm



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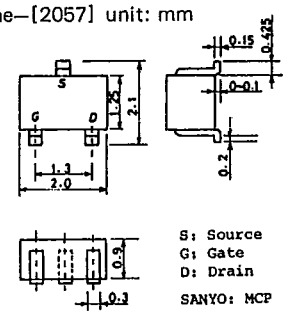
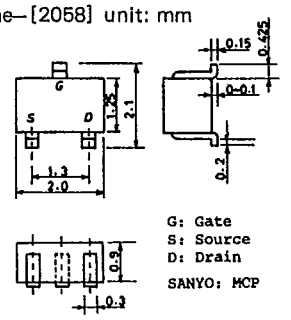
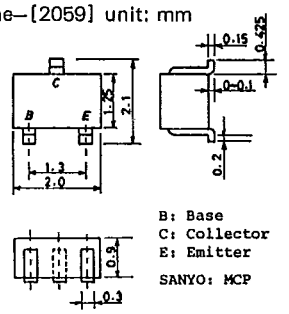
Case Outline—[2057] unit: mm



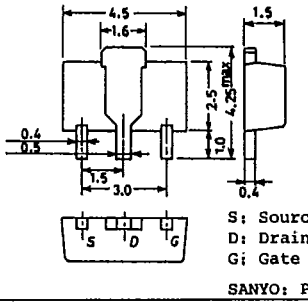
Case Outline—[2058] unit: mm



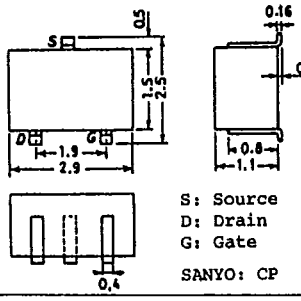
Case Outline—[2059] unit: mm



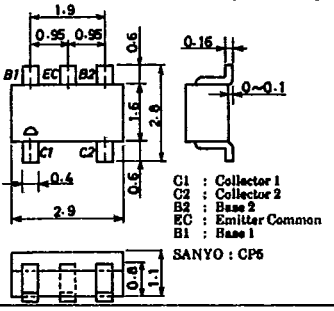
Case Outline—[2062] unit: mm



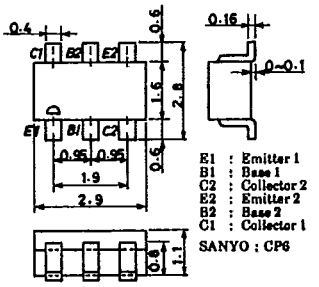
Case Outline—[2065] unit: mm



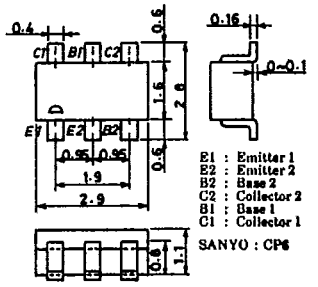
Case Outline—[2066] unit: mm



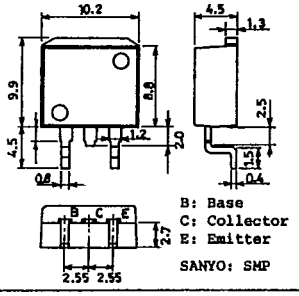
Case Outline—[2067] unit: mm



Case Outline—[2068] unit: mm



Case Outline—[2069] unit: mm



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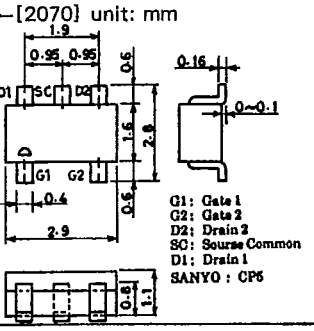

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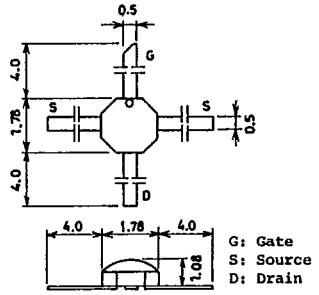
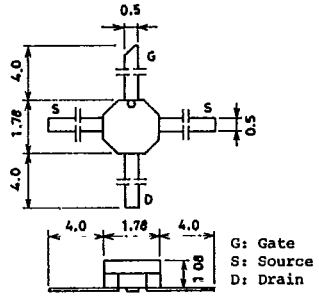
Case Outline—[2071] unit: mm



Case Outline—[2072] unit: mm



Case Outline—[2073] unit: mm