

2SD1652



2039

NPN Triple Diffused Planar Silicon Transistor

Color TV Horizontal Deflection Output Applications(with Damper Diode)

©1750B

Applications

- High-voltage, power switching

Features

- . Fast speed ($t_{fmax}=0.4\mu s$).
- . High reliability (Adoption of HVP process).
- . High breakdown voltage ($V_{CB0}=1500V$).
- . Micaless package facilitating mounting operation.

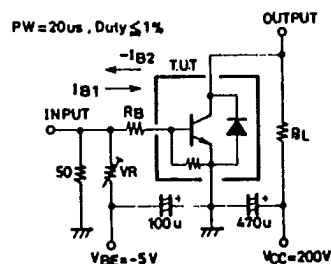
Absolute Maximum Ratings at Ta=25°C

Collector to Base Voltage	V_{CB0}	1500	V
Collector to Emitter Voltage	V_{CE0}	800	V
Emitter to Base Voltage	V_{EB0}	6	V
Collector Current	I_C	6	A
Peak Collector Current	i_{op}	16	A
Collector Dissipation	P_C	60	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}\text{C}$

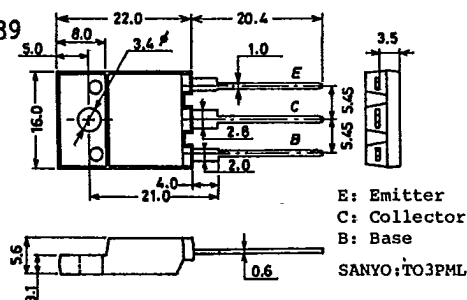
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Test Conditions	min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=800V, I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V, I_C=0$	40		130	mA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=1A$	8			
Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=1A$		3		MHz
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5A, I_B=1A$			5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5A, I_B=1A$			1.5	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=5mA, I_E=0$	1500			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100mA, R_{BE}=\infty$	800			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=200mA, I_C=0$	7			V
Diode Forward Voltage	V_F	$I_{EC}=6A$			2	V
Fall Time	t_f	$I_C=5A, I_{B1}=1A, I_{B2}=-2A, V_{CC}=200V, R_f=40\Omega$			0.4	μs

Switching Time Test Circuit

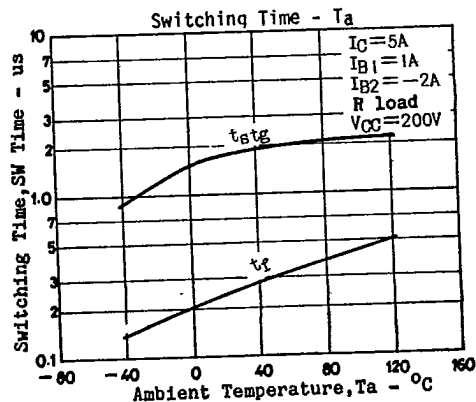
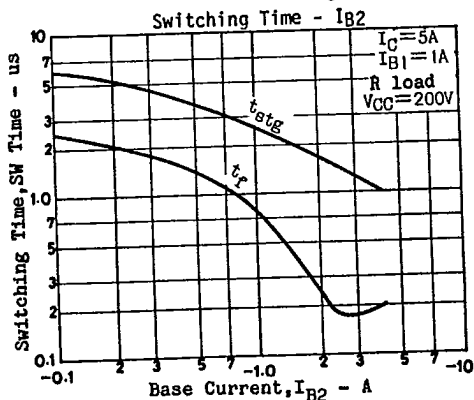
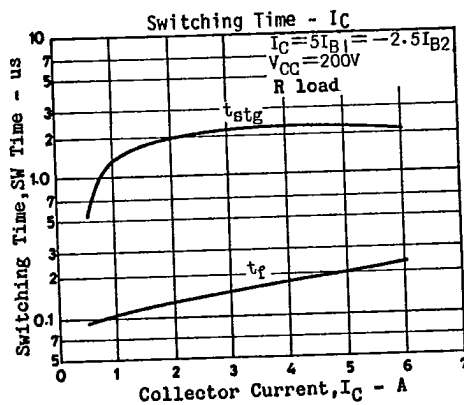
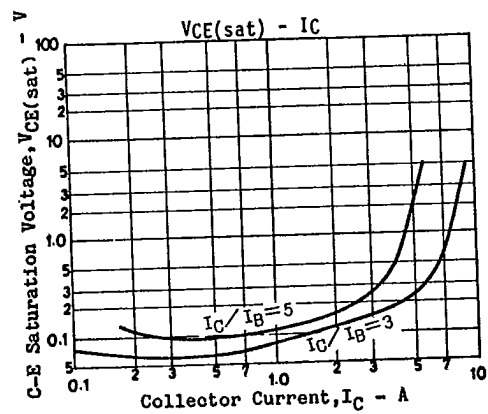
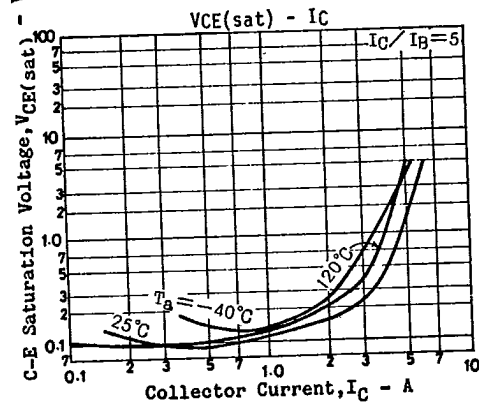
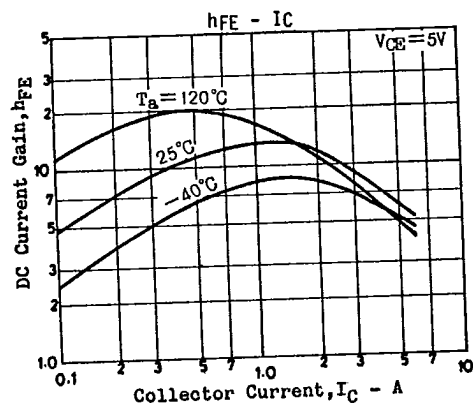
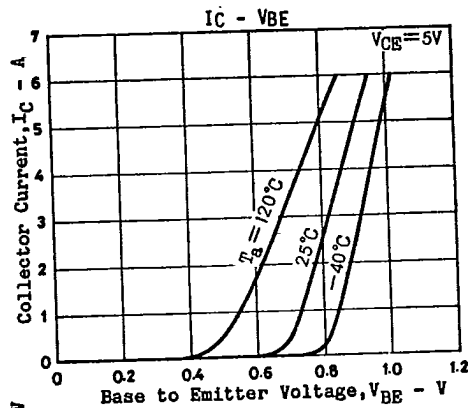
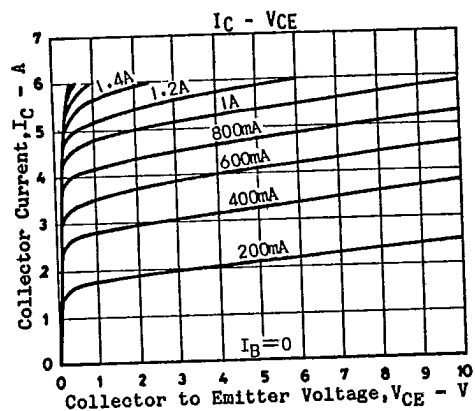


Case Outline 2039
(unit:mm)



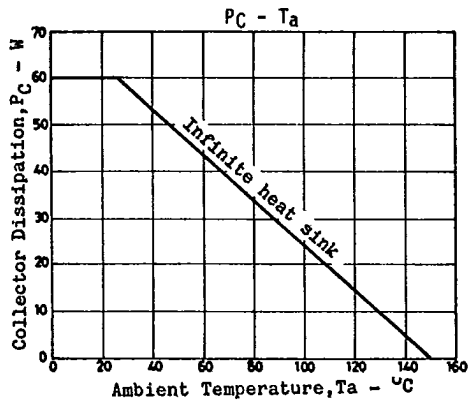
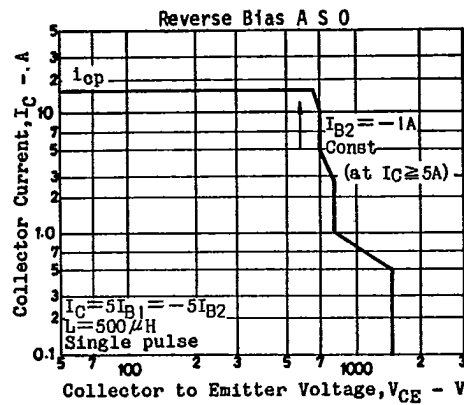
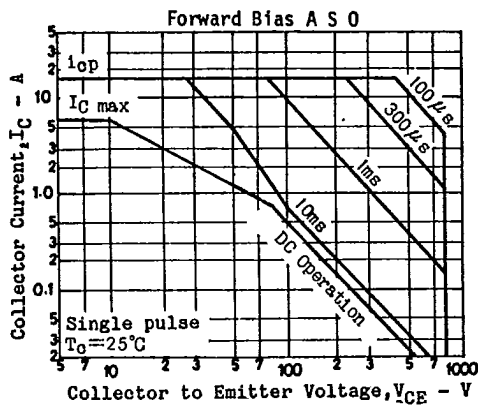
5277KI/D244KI, TS No. 1750-1/3

1479

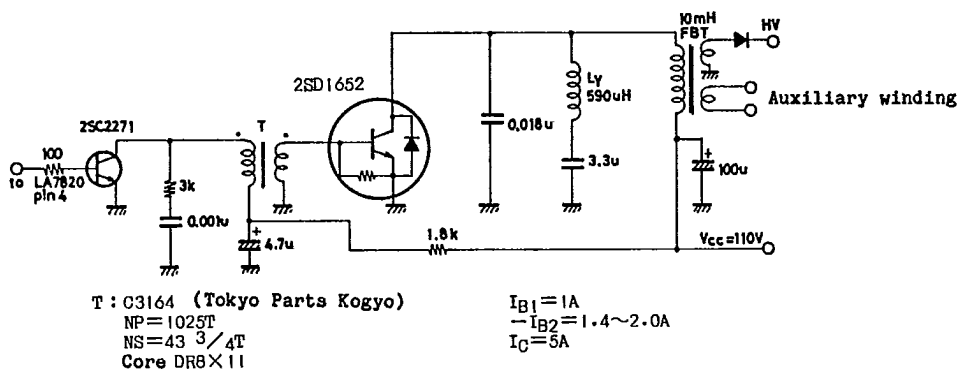


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Sample Application Circuit



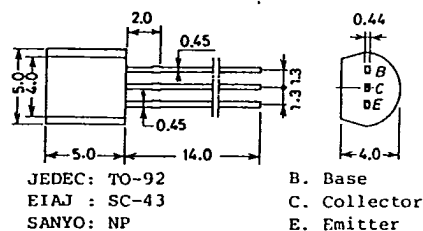
T-91-20

CASE OUTLINES AND ATTACHMENTS

- All of Sanyo 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.

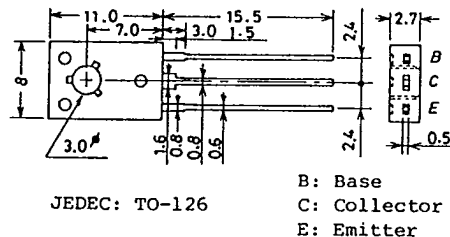
Case Outline—[2003A]

unit:mm



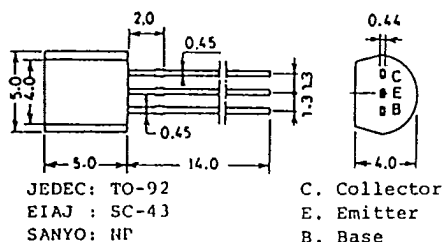
Case Outline—[2009A]

unit:mm



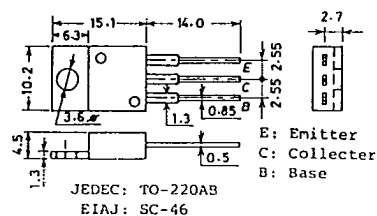
Case Outline—[2004A]

unit:mm



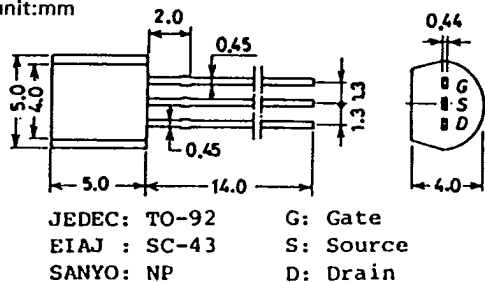
Case Outline—[2010A]

unit:mm



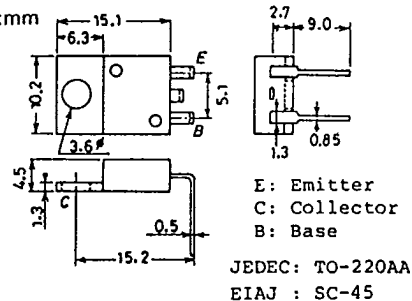
Case Outline—[2005A]

unit:mm



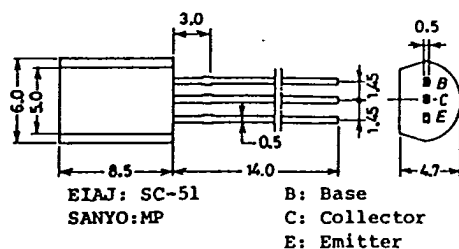
Case Outline—[2012]

unit:mm



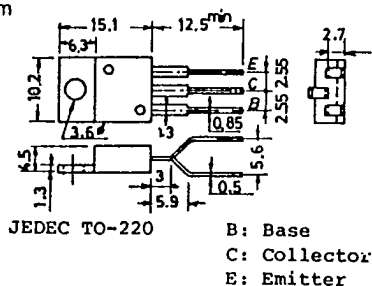
Case Outline—[2006A]

unit:mm



Case Outline—[2013]

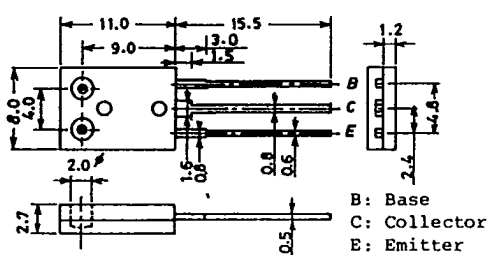
unit:mm



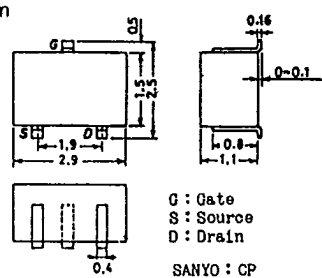
EIAI TC-3, TR-3
JEDEC TO-3

SANYO:DP6A

Case Outline—[2043A] unit:mm

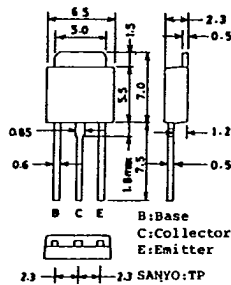


SANYO: TO126LP

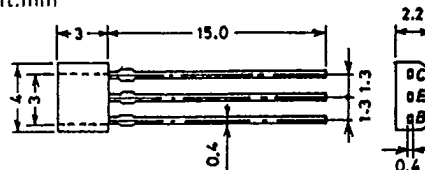
Case Outline—[2050]
unit:mm

SANYO: CP

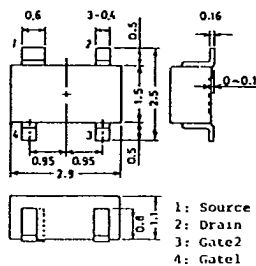
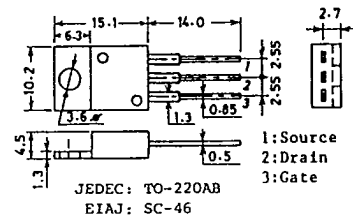
T-91-20

Case Outline—[2045]
unit:mm

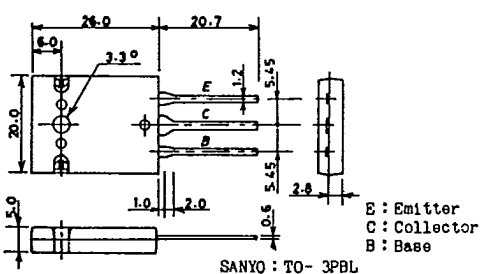
SANYO: TP

Case Outline—[2051]
unit:mm

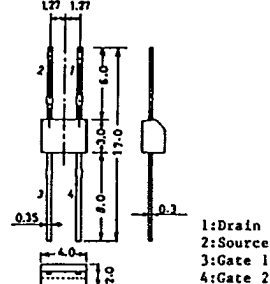
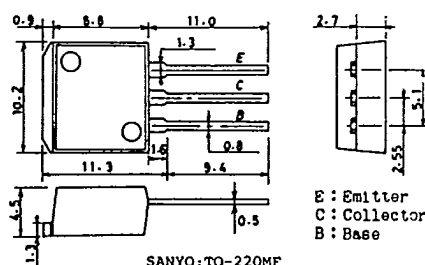
SANYO: SPA

Case Outline—[2046]
unit:mmCase Outline—[2052A]
unit:mmJEDEC: TO-220AB
EIAJ: SC-46

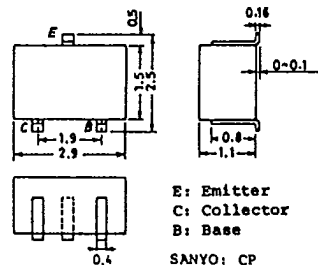
Case Outline—[2048] unit:mm



SANYO: TO-3PBL

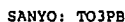
Case Outline—[2053]
unit:mmCase Outline—[2049]
unit:mm

SANYO: TO-220MF

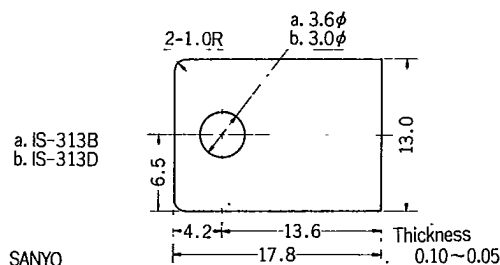
Case Outline—[2054]
unit:mm

SANYO: CP

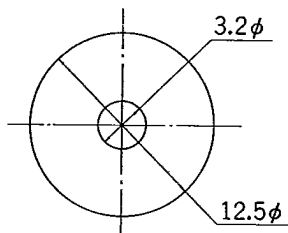
T-91-20



unit:mm



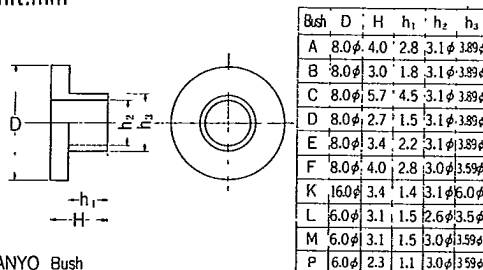
unit:mm



SANYO IS-126

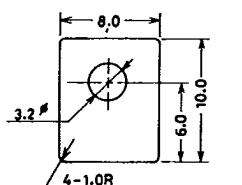
Thickness : 0.075

unit:mm



SANYO Bush

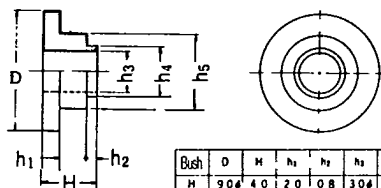
unit:mm



SANYO IS-126A Mica

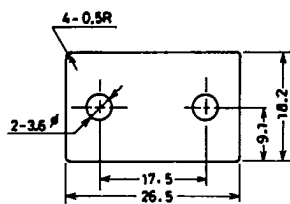
Thickness : 0.075

unit:mm



SANYO Bush

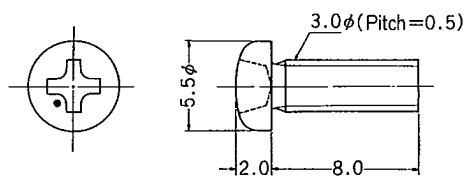
unit:mm



SANYO IS-20MA Mica

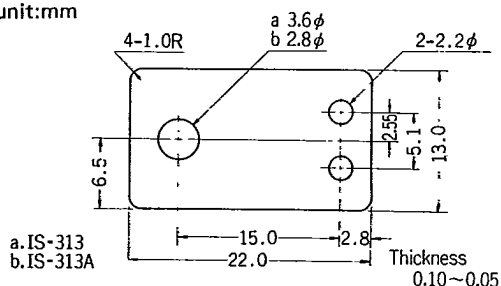
Thickness : 0.05~0.1

unit:mm

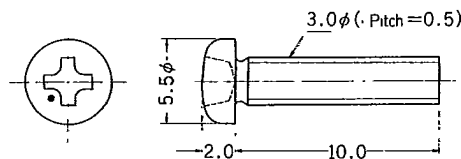


JIS No.B1111 M3×0.5

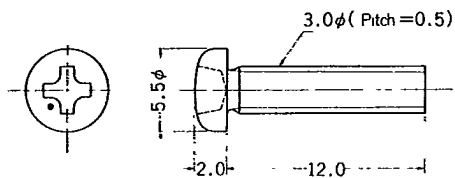
unit:mm



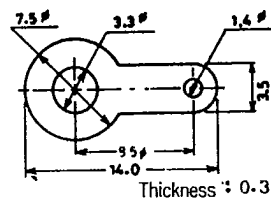
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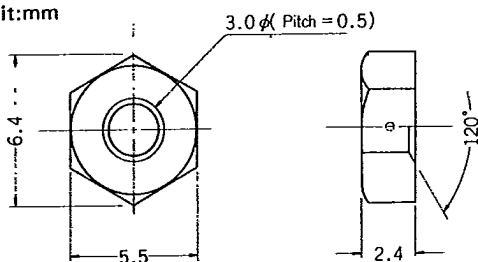
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Case Outline—[0013]
unit:mm

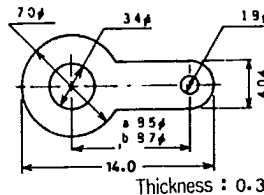
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Case Outline—[0018]
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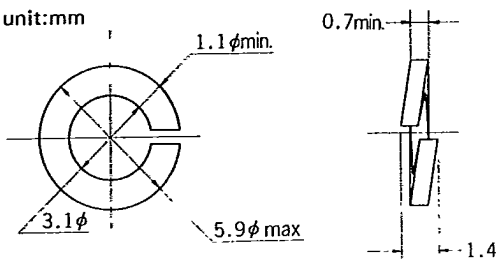
SANYO Lug 1.4

Case Outline—[0014]
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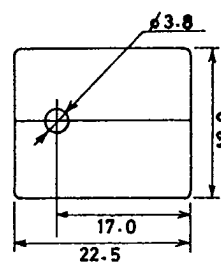
JIS No. B1181 M3×0.5

Case Outline—[0019]
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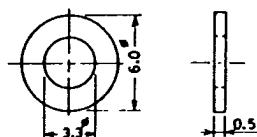
SANYO Lug 1.8φ

Case Outline—[0015]
unit:mm

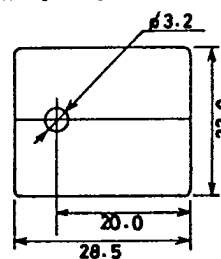
JIS No. B 1251 Spring washer (M3)

Case Outline—[0020]
unit:mm

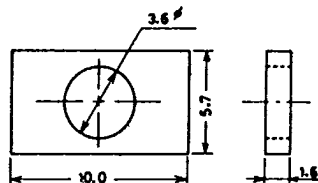
SANYO IS-3MP Mica

Case Outline—[0016]
unit:mm

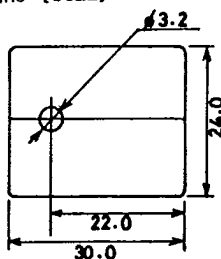
JIS No. B1252 Flat washer

Case Outline—[0021]
unit:mm

SANYO IS-MPC Mica

Case Outline—[0017]
unit:mm

JIS No. G3141 Rectangular washer

Case Outline—[0022]
unit:mm

SANYO IS-3PBL Mica