

T-39-11



2052A

N-Channel MOS
Silicon Field-Effect Transistor

High Speed Power Switching Applications

Features

Low-on resistance, very high-speed switching, converters

Absolute Maximum Ratings at Ta=25°C

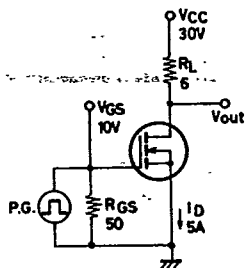
			unit
Drain to Source Voltage	V_{DS}	60	V
Gate to Source Voltage	V_{GS}	± 20	V
Drain Current(DC)	I_D	15	A
Peak Drain Current(Pulse)	I_D peak	25	A
Allowable Power Dissipation	P_D	60	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics at Ta=25°C

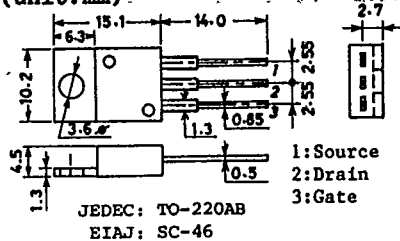
			min	typ	max	unit
D-S Breakdown Voltage	V_{DSS}	$I_D=1mA, V_{GS}=0$	60			V
Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0$			100	uA
G-S Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.5		4.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=8A$	4.0	5.5		S
Saturation Resistance	$r_{DS(on)}$	$I_D=8A, V_{GS}=10V$	0.08	0.12		ohm
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		900		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		450		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		180		pF
Turn-on Time	t_{on}	$I_D=5A, V_{GS}=10V$		90		ns
Turn-off Time	t_{off}	$I_D=5A, V_{GS}=10V$		110		ns

Note: Be careful in handling the 2SK688 because it has no protect diode between gate and source.

Switching Time Test Circuit



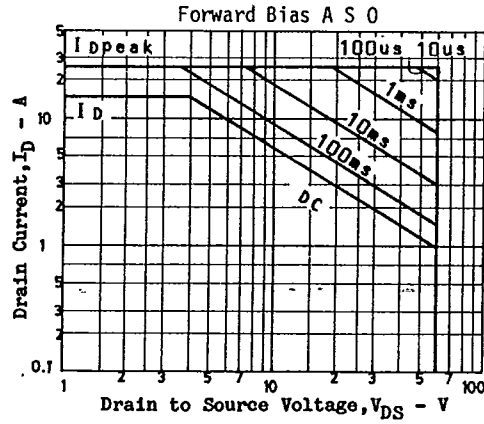
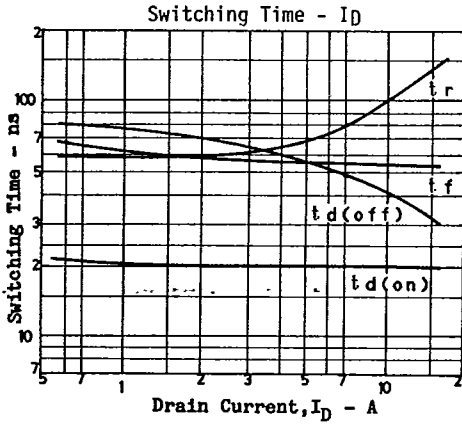
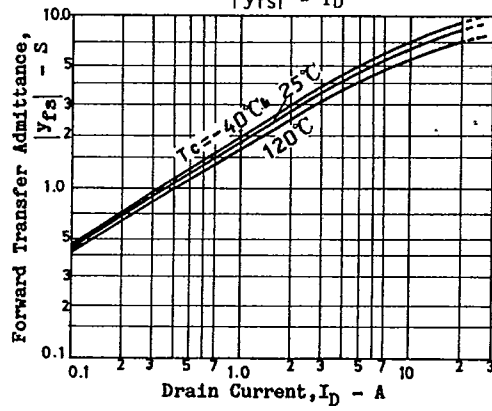
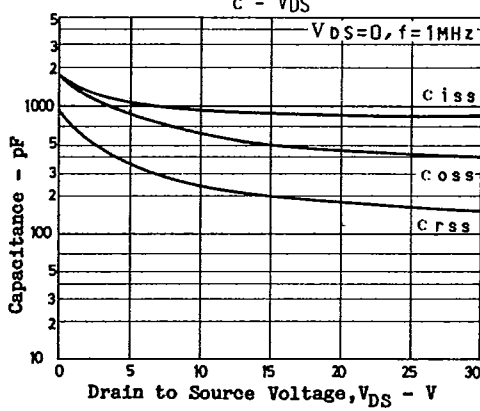
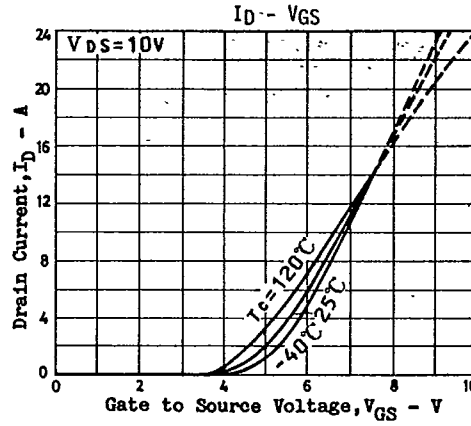
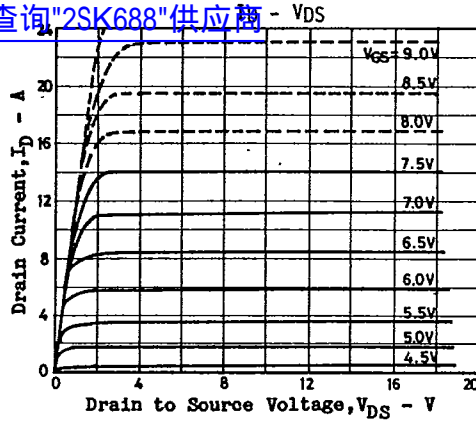
Case Outline 2052A (unit:mm)



2SK688

(T-39-11)

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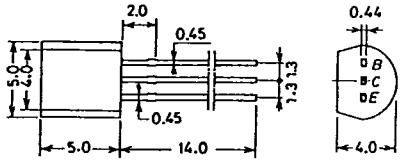
CASE OUTLINES AND ATTACHMENTS

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- 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]

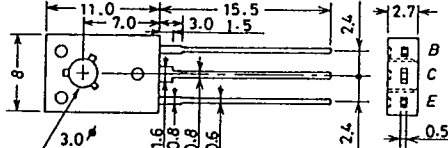
unit:mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP
B. Base
C. Collector
E. Emitter

Case Outline-[2009A]

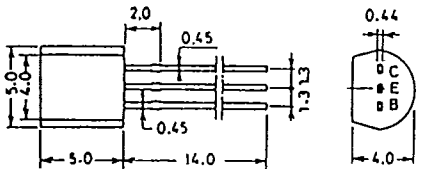
unit:mm



JEDEC: TO-126
B: Base
C: Collector
E: Emitter

Case Outline-[2004A]

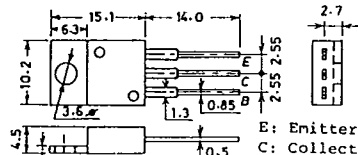
unit:mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP
C. Collector
E. Emitter
B. Base

Case Outline-[2010A]

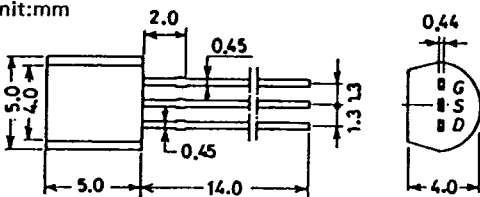
unit:mm



JEDEC: TO-220AB
EIAJ: SC-46
E: Emitter
C: Collector
B: Base

Case Outline-[2005A]

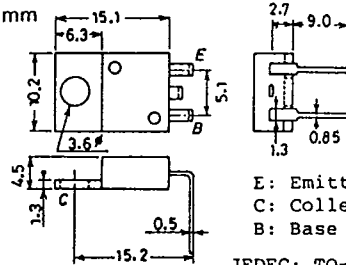
unit:mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP
G: Gate
S: Source
D: Drain
B: Base
C: Collector

Case Outline-[2012]

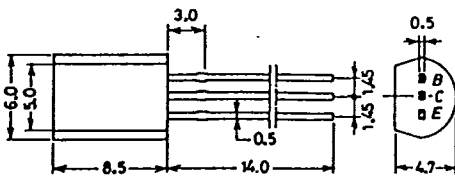
unit:mm



JEDEC: TO-220AA
EIAJ: SC-45
E: Emitter
C: Collector
B: Base

Case Outline-[2006A]

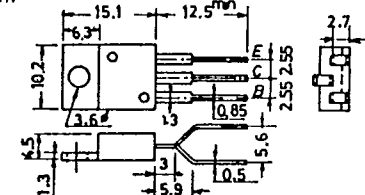
unit:mm



EIAJ: SC-51
SANYO: MP
B: Base
C: Collector
E: Emitter

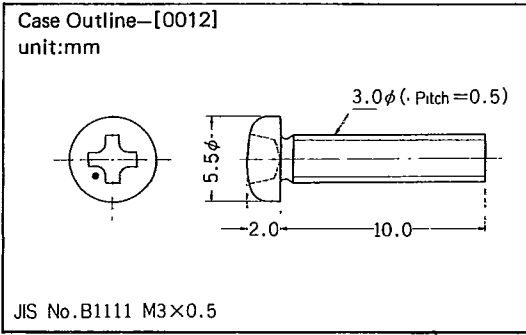
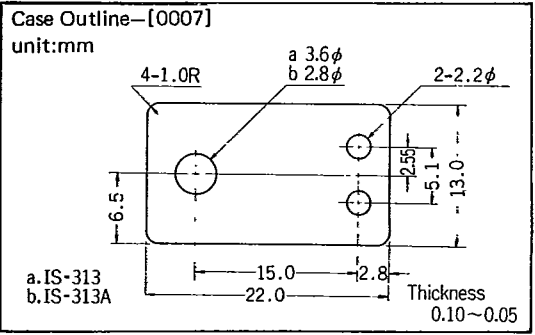
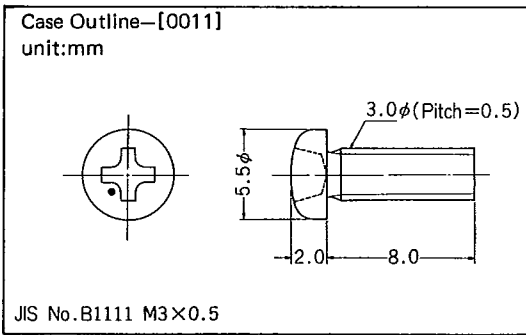
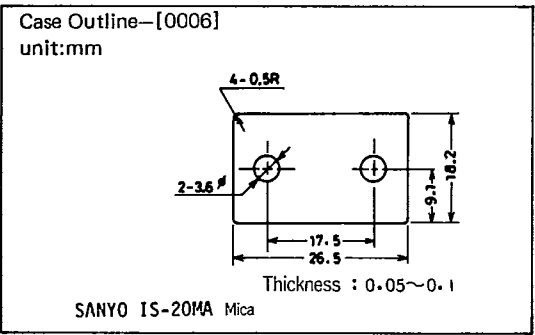
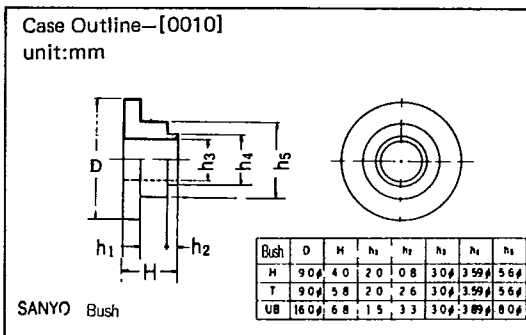
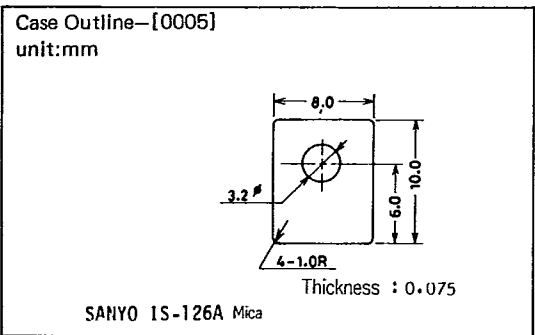
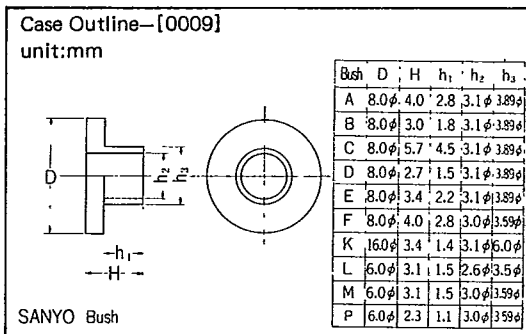
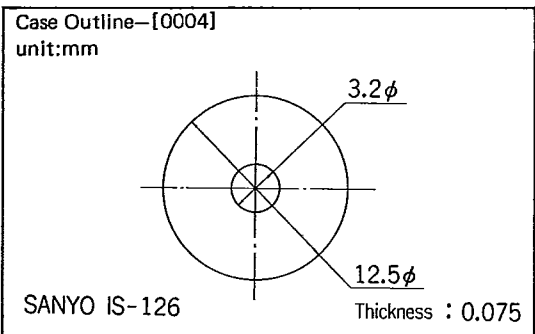
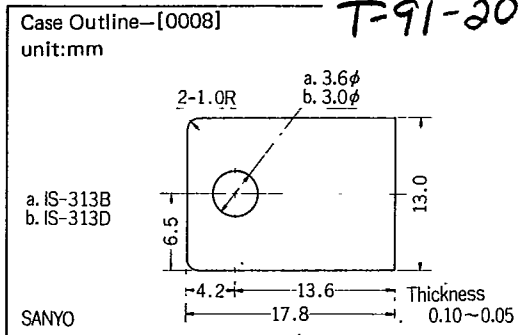
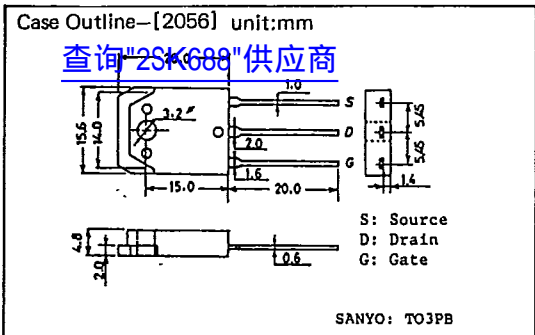
Case Outline-[2013]

unit:mm



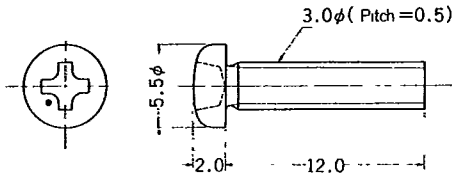
JEDEC TO-220
B: Base
C: Collector
E: Emitter

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Case Outline-[0013]

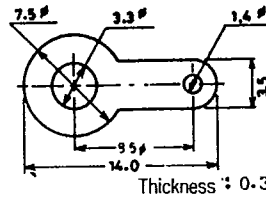
unit:mm
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JIS No. B1111 M3×0.5

Case Outline-[0018]

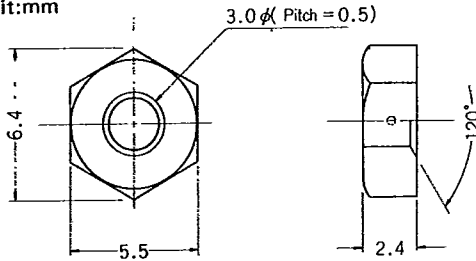
unit:mm



SANYO Lug 1.4

Case Outline-[0014]

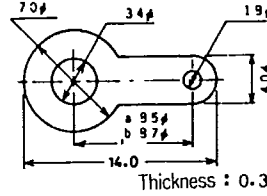
unit:mm



JIS No. B1181 M3×0.5

Case Outline-[0019]

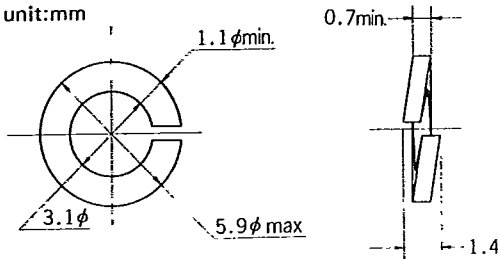
unit:mm



SANYO Lug 1.8φ

Case Outline-[0015]

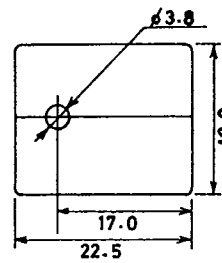
unit:mm



JIS No. B 1251 Spring washer (M3)

Case Outline-[0020]

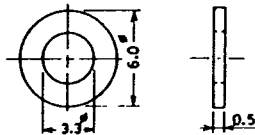
unit:mm



SANYO IS-3MP Mica

Case Outline-[0016]

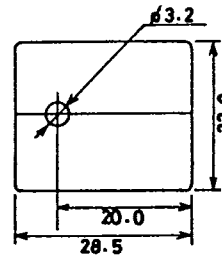
unit:mm



JIS No. B1252 Flat washer

Case Outline-[0021]

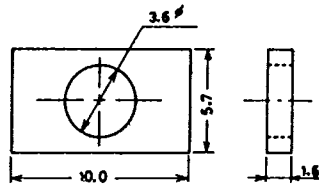
unit:mm



SANYO IS-MPC Mica

Case Outline-[0017]

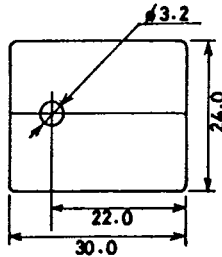
unit:mm



JIS No. G3141 Rectangular washer

Case Outline-[0022]

unit:mm



SANYO IS-3PBL Mica