

isc Silicon NPN Power Transistor
2SD1060
DESCRIPTION

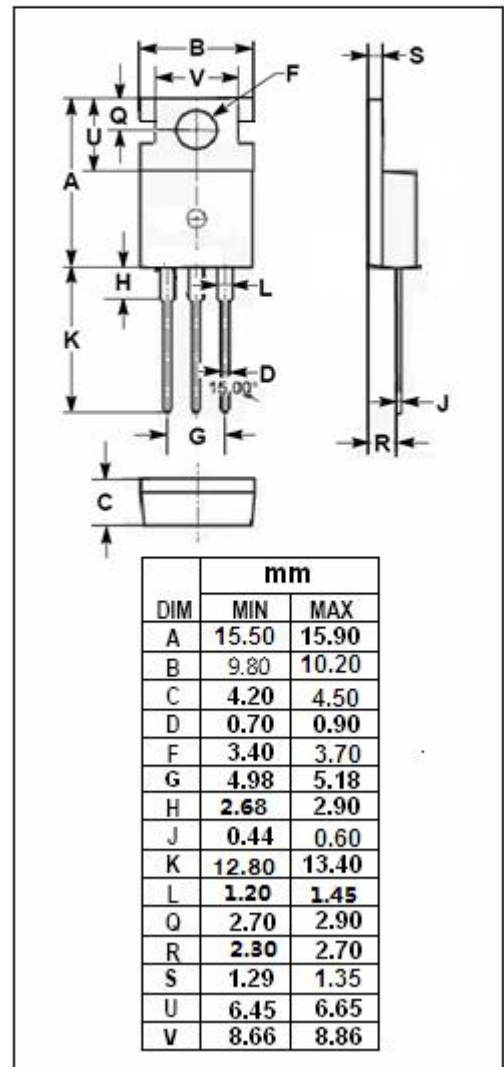
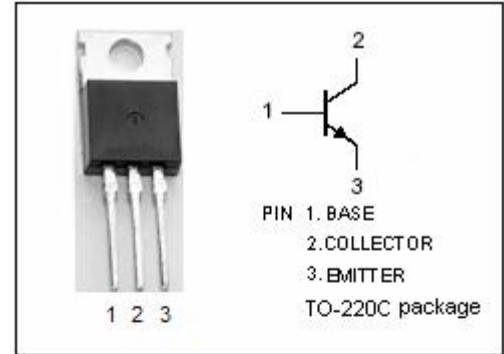
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-
: $V_{CE(\text{sat})} = 0.4V(\text{Max}) @ I_C = 3.0A$
- Complement to Type 2SB824
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for relay drivers, high-speed inverters, converters, and other general large-current switching applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	9	A
P_C	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	30	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 1\text{mA}; I_E = 0$	60			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}; R_{BE} = \infty$	50			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}; I_C = 0$	6			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}; I_B = 0.3\text{A}$			0.4	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 40\text{V}; I_E = 0$			100	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 4\text{V}; I_E = 0$			100	μA
h_{FE-1}	DC Current Gain	$I_C = 1\text{A}; V_{CE} = 2\text{V}$	70		280	
h_{FE-2}	DC Current Gain	$I_C = 3\text{A}; V_{CE} = 2\text{V}$	30			
f_T	Current-Gain—Bandwidth Product	$I_C = 1\text{A}; V_{CE} = 5\text{V}$		30		MHz
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}, f = 1\text{MHz}$		100		pF

Switching times

t_{on}	Turn-on Time	$I_C = 2\text{A}, I_{B1} = I_{B2} = 0.2\text{A}$ $R_L = 10\ \Omega; V_{CC} = 20\text{V}$		0.1		μs
t_{stg}	Storage Time			1.4		μs
t_f	Fall Time			0.2		μs

◆ h_{FE-1} Classifications

Q	R	S
70-140	100-200	140-280

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