

isc Silicon NPN Power Transistor

2SC3086

DESCRIPTION

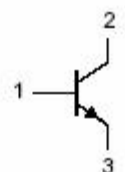
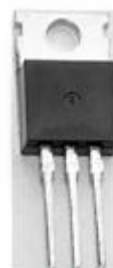
- High Breakdown Voltage-
: $V_{(BR)CBO} = 800V(\text{Min})$
- Fast Switching Speed
- Wide Area of Safe Operation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

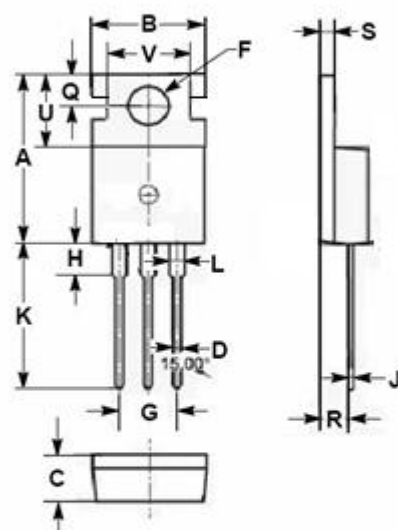
- Designed for switching regulator applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	800	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	3	A
I_{CM}	Collector Current-Peak	6	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	40	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220C package



DIM	mm	
	MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}; R_{BE} = \infty$	500			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 1\text{mA}; I_E = 0$	800			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}; I_C = 0$	7			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 1.5\text{A}; I_B = 0.3\text{A}$			1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 1.5\text{A}; I_B = 0.3\text{A}$			1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB} = 500\text{V}; I_E = 0$			10	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = 5\text{V}; I_C = 0$			10	μA
h_{FE-1}	DC Current Gain	$I_C = 0.3\text{A}; V_{CE} = 5\text{V}$	15		50	
h_{FE-2}	DC Current Gain	$I_C = 1.5\text{A}; V_{CE} = 5\text{V}$	8			
C_{OB}	Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f_{test} = 1.0\text{MHz}$		40		pF
f_T	Current-Gain—Bandwidth Product	$I_C = 0.3\text{A}; V_{CE} = 10\text{V}$		18		MHz

Switching times

t_{on}	Turn-on Time	$I_C = 2\text{A}, I_{B1} = -I_{B2} = -0.4\text{A};$ $R_L = 100\Omega; V_{CC} = 200\text{V}$			1.0	μs
t_{stg}	Storage Time				3.0	μs
t_f	Fall Time				1.0	μs

◆ h_{FE-1} Classifications

L	M	N
15-30	20-40	30-50

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