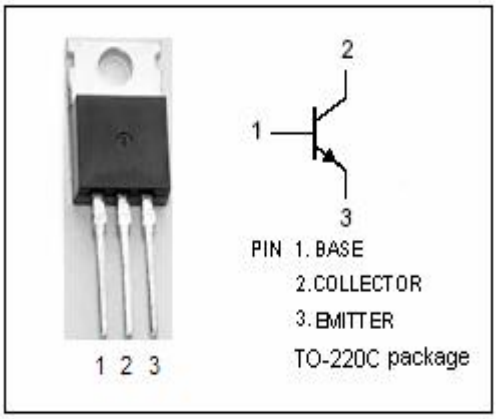
isc Silicon NPN Power Transistor — 2SD1345

DESCRIPTION

- High Switching Time
- Low Collector Saturation Voltage
  : $V_{CE(sat)}$= 0.4V(Max)@I_C= 4A
- Wide Area of Safe Operation
- Complement to Type 2SB983
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

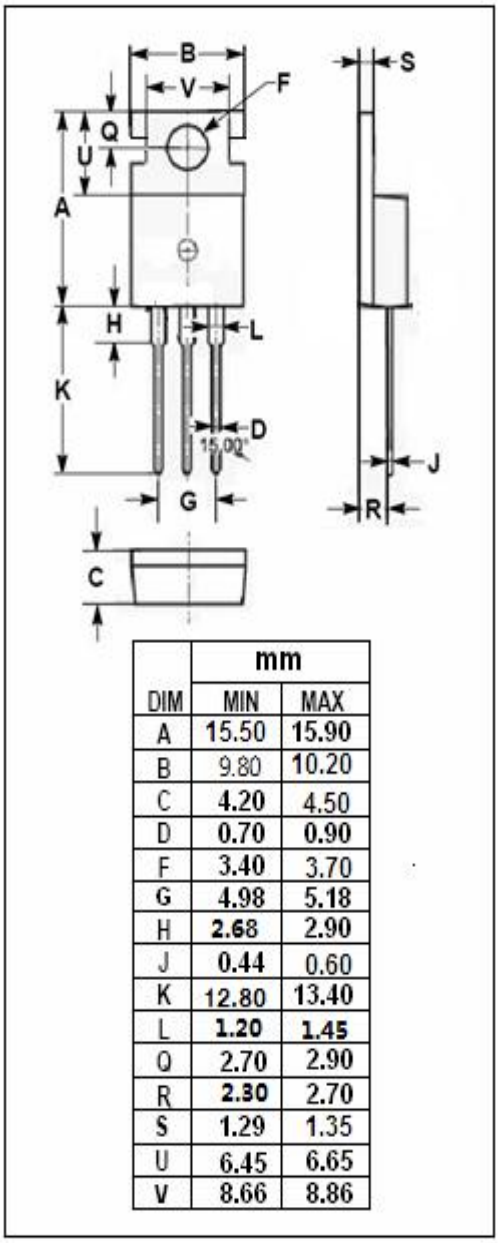
- Inverters, converters
- Controllers for DC motor, pulse motor
- Switching power supplies
- General power applications

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

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	7	A
I_{CM}	Collector Current-Peak	12	A
I_B	Base Current-Continuous	1.5	A
I_{BM}	Base Current-Peak	4	A
P_C	Total Power Dissipation @ T_C=25℃	40	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	3.1	℃/W



DIM	mm MIN	mm 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℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 1mA; I_B= 0	50			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A			0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 4A; I_B= 0.4A			1.2	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 40V; I_E= 0			0.1	mA
I_{CEO}	Collector Cutoff Current	V_{CE}= 40V; I_B= 0			0.1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 4V; I_C= 0			0.1	mA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 2V	70		200	
h_{FE-2}	DC Current Gain	I_C= 5A; V_{CE}= 2V	30			
f_T	Current-Gain—Bandwidth Product	I_C= 1A; V_{CE}= 5V		10		MHz
Switching times						
t_{on}	Turn-on Time	R_L= 10Ω , V_{BB2}= -5V I_C= 2A; I_{B1}= -I_{B2}= 0.2A		0.2		μs
t_{stg}	Storage Time			0.9		μs
t_f	Fall Time			0.3		μs

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