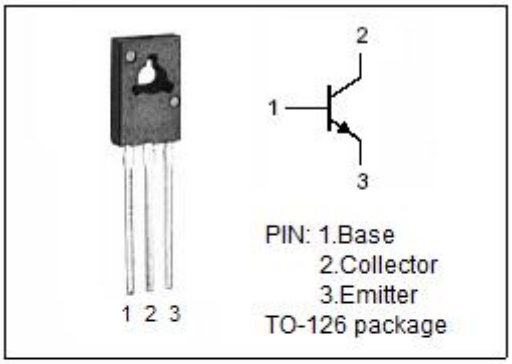
isc Silicon NPN Power Transistor — APT13005SU-G1

DESCRIPTION

- High Collector-Emitter Voltage
  : V_{CES}= 700V(Min.)
- Fast Switching Speed
- Collector Saturation Voltage
  : $V_{CE(sat)}$ = 0.3V(Max) @ I_C= 1.0A
- Minimum Lot-to-Lot variations for robust device performance and reliable operation



APPLICATIONS

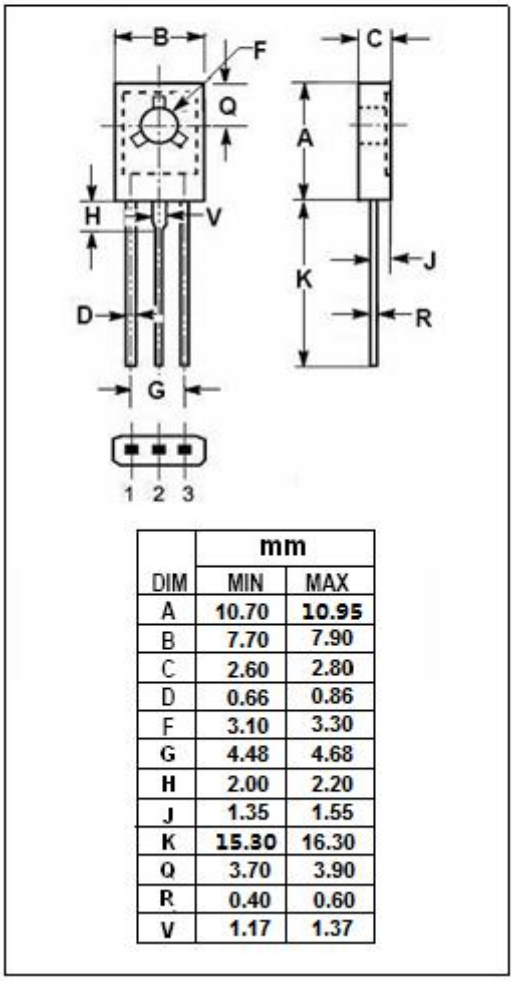
- Battery charges for Mobile Phone of BCD Solution
- Power supply for DVD/STB of BCD Solution
- Driver for LED Lighting of BCD Solution

ABSOLUTE MAXIMUM RATINGS(Ta=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CES}	Collector-Emitter Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	450	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current-Continuous	3.2	A
I_{CM}	Collector Current-Peak	6.4	A
I_B	Base Current	1.6	A
P_C	Collector Power Dissipation Tc=25℃	20	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	6.25	℃/W



DIM	mm MIN	mm MAX
A	10.70	10.95
B	7.70	7.90
C	2.60	2.80
D	0.66	0.86
F	3.10	3.30
G	4.48	4.68
H	2.00	2.20
J	1.35	1.55
K	15.30	16.30
Q	3.70	3.90
R	0.40	0.60
V	1.17	1.37

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ELECTRICAL CHARACTERISTICS

T_C =25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	I_C= 1mA; I_B= 0	450			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 1 A ;I_B= 0.2A			0.3	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 2 A ;I_B= 0.5A			0.6	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	I_C= 3A ;I_B= 0.75A			1.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 1 A ;I_B= 0.2A			1.2	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 2A ;I_B= 0.5A			1.4	V
I_{EBO}	Emitter Cutoff Current	V_{EB}= 9V; I_C= 0			10	uA
I_{CEO}	Collector Cutoff Curren	V_{CE}= 450V; I_B= 0			0.1	mA
I_{CBO}	Collector Cutoff Curren	V_{CB}= 700V; I_E= 0			10	uA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 5V	15		35	
h_{FE-2}	DC Current Gain	I_C= 2A; V_{CE}= 5V	8		35	
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A; V_{CE}= 10V;	4			MHz
C_{OB}	Output Capacitance	V_{CB}= 10V,f_{test}= 0.1MHz		35		pF

Switching times

t_{on}	Turn-on Time	I_C= 2A , I_{B1}= -I_{B2}= 0.4A			0.7	μ s
t_{stg}	Storage Time				4.5	μ s
t_f	Fall Time				0.8	μ s