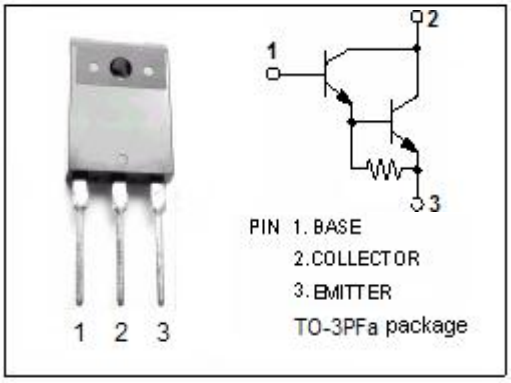
isc Silicon NPN Darlington Power Transistor — 2SD1893

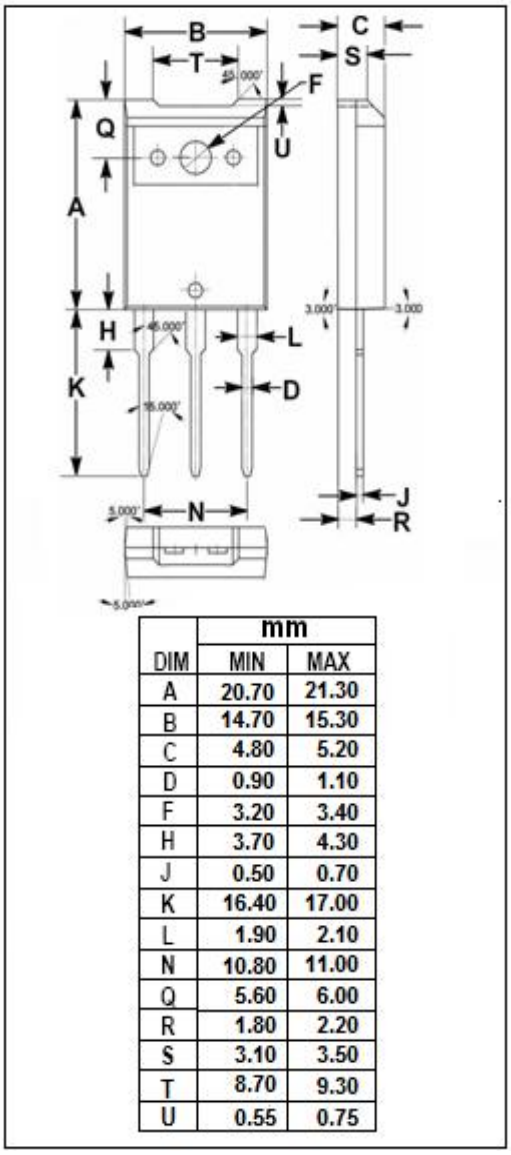


DESCRIPTION

- High DC Current Gain-
  : h_{FE}= 5000(Min)@I_C= 5A
- Low-Collector Saturation Voltage-
  : $V_{CE(sat)}$= 2.5V(Max.)@I_C= 5A
- Complement to Type 2SB1253
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for power amplifier applications



DIM	mm MIN	mm MAX
A	20.70	21.30
B	14.70	15.30
C	4.80	5.20
D	0.90	1.10
F	3.20	3.40
H	3.70	4.30
J	0.50	0.70
K	16.40	17.00
L	1.90	2.10
N	10.80	11.00
Q	5.60	6.00
R	1.80	2.20
S	3.10	3.50
T	8.70	9.30
U	0.55	0.75

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	130	V
V_{CEO}	Collector-Emitter Voltage	110	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	6	A
I_{CM}	Collector Current-Peak	10	A
P_C	Collector Power Dissipation @ T_C=25℃	50	W
	Collector Power Dissipation @ T_a=25℃	3	
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

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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= 30mA; I_B= 0	110			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 5A; I_B= 5mA			2.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C= 5A; I_B= 5mA			3.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 130V; I_E= 0			100	μA
I_{CEO}	Collector Cutoff Current	V_{CE}= 110V; I_B= 0			100	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			100	μA
h_{FE-1}	DC Current Gain	I_C= 1A; V_{CE}= 5V	2000			
h_{FE-2}	DC Current Gain	I_C= 5A; V_{CE}= 5V	5000		30000	
f_T	Current-Gain—Bandwidth Product	I_C= 0.5A; V_{CE}= 10V		20		MHz
Switching Times						
t_{on}	Turn-on Time	I_C= 5A; I_{B1}= I_{B2}= 5mA, V_{CC}= 50V		1.4		μs
t_{stg}	Storage Time			4.5		μs
t_f	Fall Time			0.8		μs

◆ **h_{FE-2} Classifications**

Q	P
5000-15000	8000-30000

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