

isc Silicon NPN Darlington Power Transistor

2SD1891

DESCRIPTION

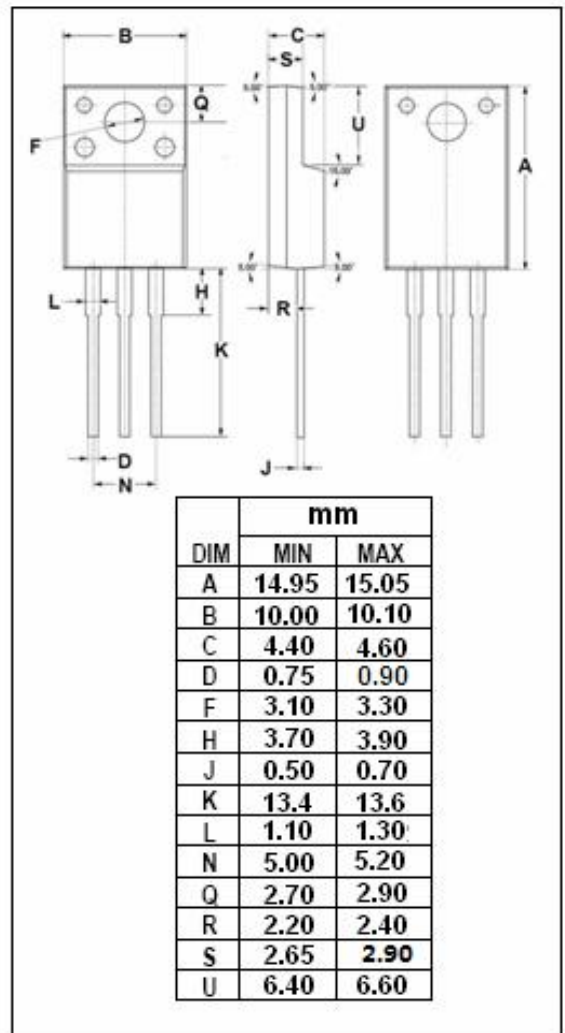
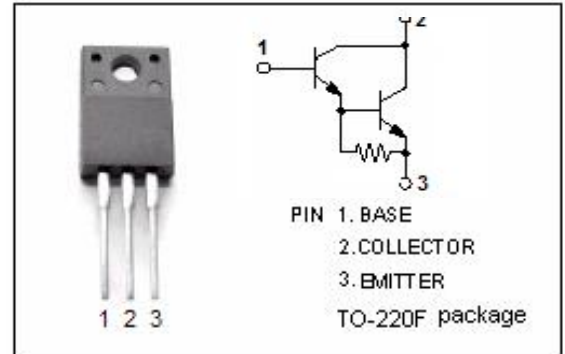
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 90V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 5000(\text{Min}) @ I_C = 3A$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 3.0V(\text{Max.}) @ I_C = 3A$
- Complement to Type 2SB1251
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- For power amplification

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	110	V
V_{CEO}	Collector-Emitter Voltage	90	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	4	A
I_{CP}	Collector Current-Peak	7	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	40	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD1891****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA; I _B = 0	90			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 1mA; I _E = 0	110			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 3mA			3.0	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 3mA			3.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 110V; I _E = 0			100	μ A
I _{CEO}	Collector Cutoff current	V _{CE} = 90V, I _B = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			3.0	mA
h _{FE-1}	DC Current Gain	I _C = 1A; V _{CE} = 5V	2000			
h _{FE-2}	DC Current Gain	I _C = 3A; 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 = 3A; I _{B1} = I _{B2} = 3mA		2.5		μ s
t _{stg}	Storage Time			3.0		μ s
t _f	Fall Time			0.7		μ s

◆ h_{FE-2} Classifications

Q	P
5000-15000	8000-30000