

isc Silicon NPN Darlington Power Transistor
2SD2161
DESCRIPTION

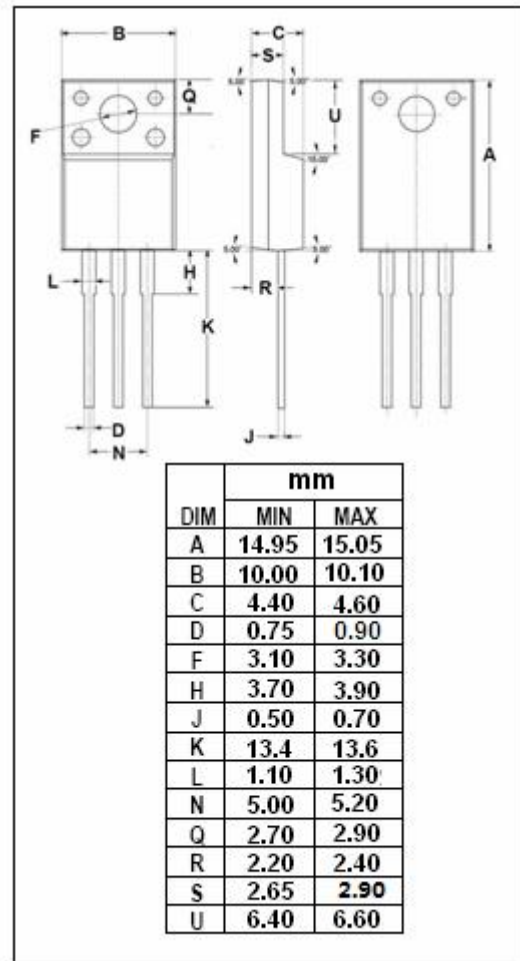
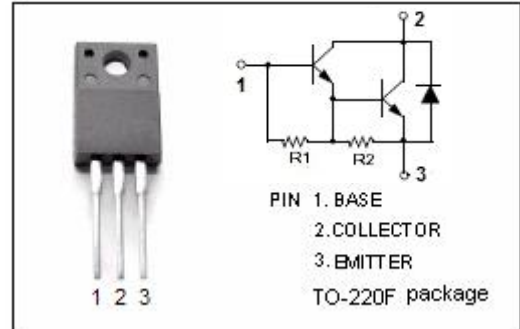
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 100V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 2000(\text{Min})@ (V_{CE} = 2V, I_C = 2A)$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max})@ (I_C = 2A, I_B = 2mA)$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for low-frequency power amplifiers and low-speed switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	0.5	A
P_C	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	20	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 2A; I _B = 2mA			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 2A; I _B = 2mA			2.0	V
I _{CB0}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			1.0	μ A
h _{FE-1}	DC Current Gain	I _C = 2A; V _{CE} = 2V	2000	8000	20000	
h _{FE-2}	DC Current Gain	I _C = 4A; V _{CE} = 2V	500			
f _T	Current-Gain—Bandwidth Product	I _C = 0.5A; V _{CE} = -5V		30		MHz
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = -10V; f _{test} = 1MHz		35		pF

◆ h_{FE-1} Classifications

M	L	K
2000-5000	4000-10000	8000-20000

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