

isc Silicon NPN Darlington Power Transistor

2SD1415A

DESCRIPTION

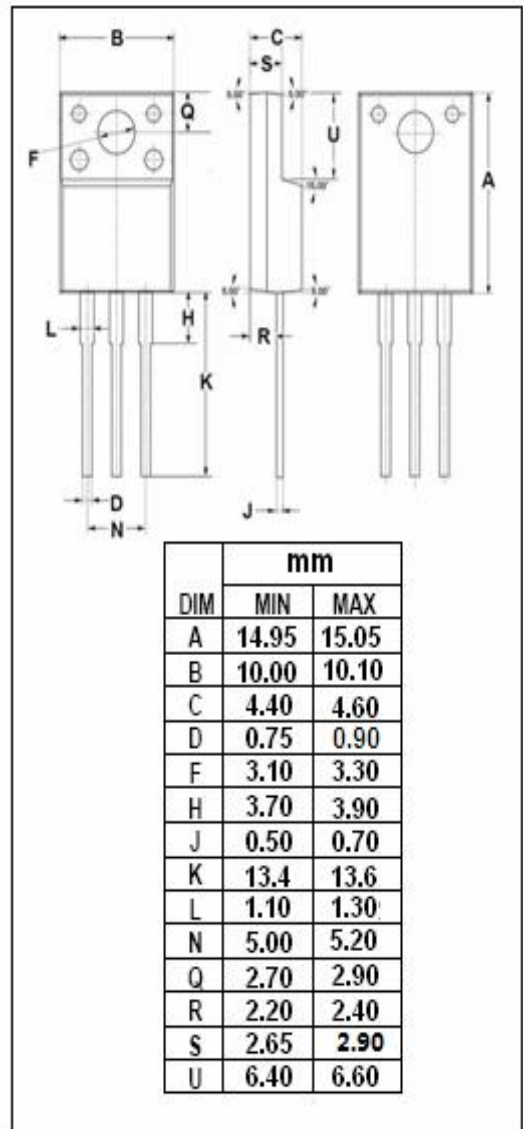
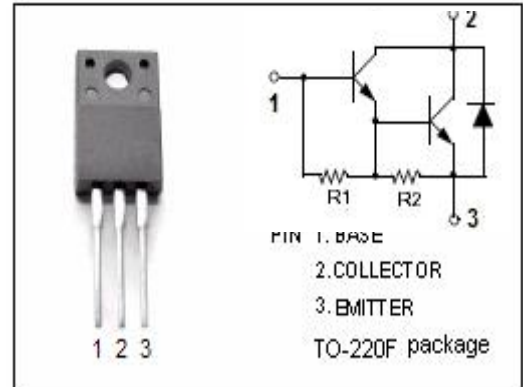
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 100V(\text{Min})$
- Collector-Emitter Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 3A$
- High DC Current Gain
: $h_{FE} = 2000(\text{Min}) @ I_C = 3A, V_{CE} = 3V$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- High power switching applications
- Hammer driver, pulse motor driver applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	7	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	0.7	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	25	W
	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2.0	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD1415A****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	100			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 6mA			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 6mA			2.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 100V; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C = 0	0.75		3.0	mA
h _{FE-1}	DC Current Gain	I _C = 3A ; V _{CE} = 3V	2000		15000	
h _{FE-2}	DC Current Gain	I _C = 6A ; V _{CE} = 3V	1000			

Switching times

t _{on}	Turn-on Time	I _{B1} = I _{B2} = 6mA; R _L = 15 Ω ; V _{CC} ≈ 45V P _W =20 μ s; Duty Cycle≤1%		0.3		μ s
t _{stg}	Storage Time			5.1		μ s
t _f	Fall Time			0.6		μ s

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