

isc Silicon PNP Darlington Power Transistor

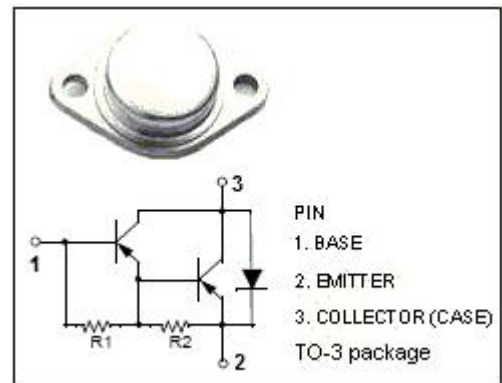
MJ11013

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = -90V(\text{Min.})$
- High DC Current Gain-
: $h_{FE} = 1000(\text{Min.})@I_C = -20A$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = -3.0V(\text{Max.})@I_C = -20A$
- Complement to the NPN MJ11014
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

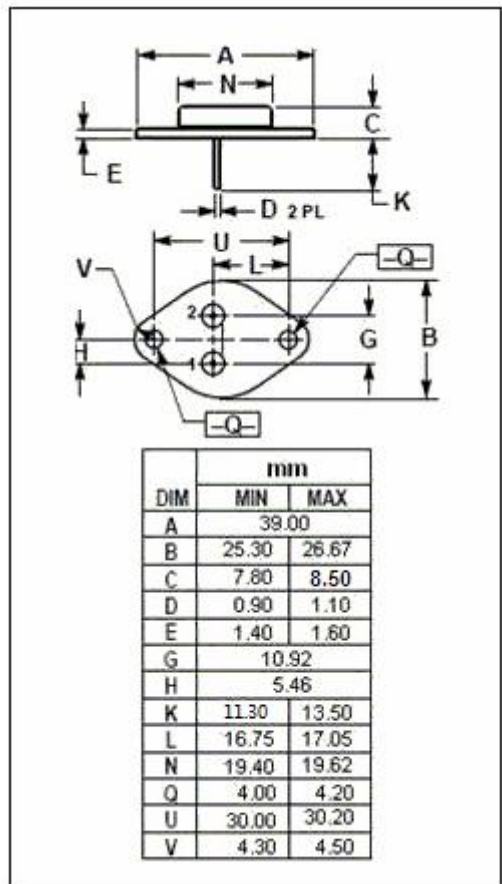
APPLICATIONS

- Designed for use as output devices in complementary general purpose amplifier applications.



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-90	V
V_{CEO}	Collector-Emitter Voltage	-90	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-30	A
I_{CM}	Collector Current-Peak	-50	A
I_B	Base Current-Continuous	-1	A
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	200	W
T_j	Junction Temperature	200	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~+200	$^\circ\text{C}$



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	0.87	$^\circ\text{C}/\text{W}$

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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 = -50mA; I _B = 0	-90			V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = -20A; I _B = -0.2A			-3.0	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = -30A; I _B = -0.3A			-4.0	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = -20A; I _B = -0.2A			-3.5	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = -30A; I _B = -0.3A			-5.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} =-90V; I _E =0 V _{CB} =-90V; I _E =0; T _C =150°C			-1.0 -5.0	mA
I _{CEO}	Collector Cutoff Current	V _{CE} = -90V; I _B = 0			-1.0	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = -5V; I _C = 0			-5.0	mA
h _{FE-1}	DC Current Gain	I _C = -20A, V _{CE} = -5V	1000			
h _{FE-2}	DC Current Gain	I _C = -30A, V _{CE} = -5V	200			

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