

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Darlington Power Transistor

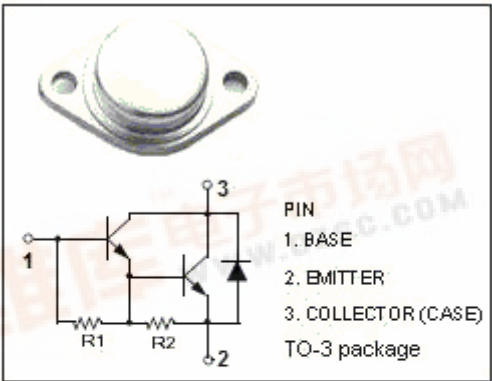
MJ11014

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 Type MJ11013

APPLICATIONS

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

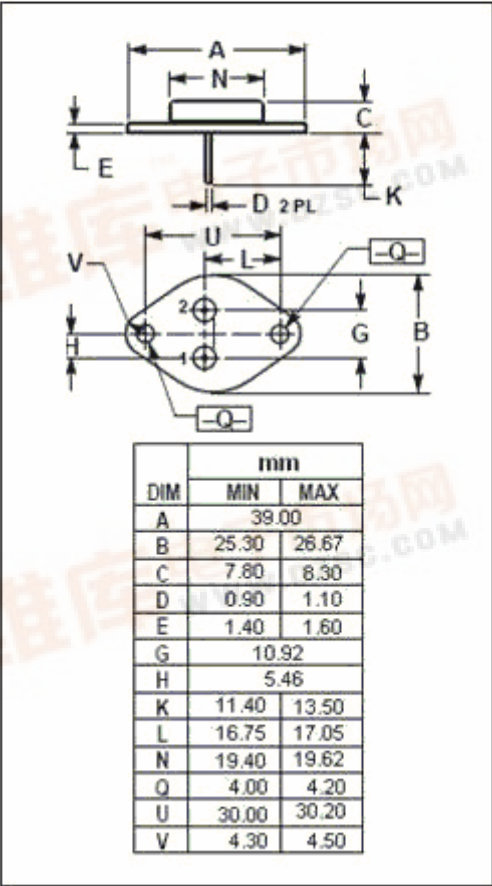


ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

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 @ $T_C = 25^\circ C$	200	W
T_j	Junction Temperature	200	$^\circ C$
T_{stg}	Storage Temperature Range	-55~+200	$^\circ C$

THERMAL CHARACTERISTICS

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



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=0.1\text{A}; I_B=0$	90			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=0.2\text{A}$			3.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=30\text{A}; I_B=0.3\text{A}$			4.0	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	$I_C=20\text{A}; I_B=0.2\text{A}$			3.5	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	$I_C=30\text{A}; I_B=0.3\text{A}$			5.0	V
I_{CER}	Collector Cutoff Current	$V_{CE}=90\text{V}; R_{BE}=1\text{k}\Omega$ $V_{CE}=90\text{V}; R_{BE}=1\text{k}\Omega; T_C=150^{\circ}\text{C}$			1.0 5.0	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=50\text{V}; I_B=0$			1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$			5.0	mA
h_{FE-1}	DC Current Gain	$I_C=20\text{A}, V_{CE}=5\text{V}$	1000			
h_{FE-2}	DC Current Gain	$I_C=30\text{A}, V_{CE}=5\text{V}$	200			