

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistors

TIP562/563

DESCRIPTION

- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 300V(\text{Min})$ - TIP562  
=  $400V(\text{Min})$ - TIP563
- High Power Dissipation

APPLICATIONS

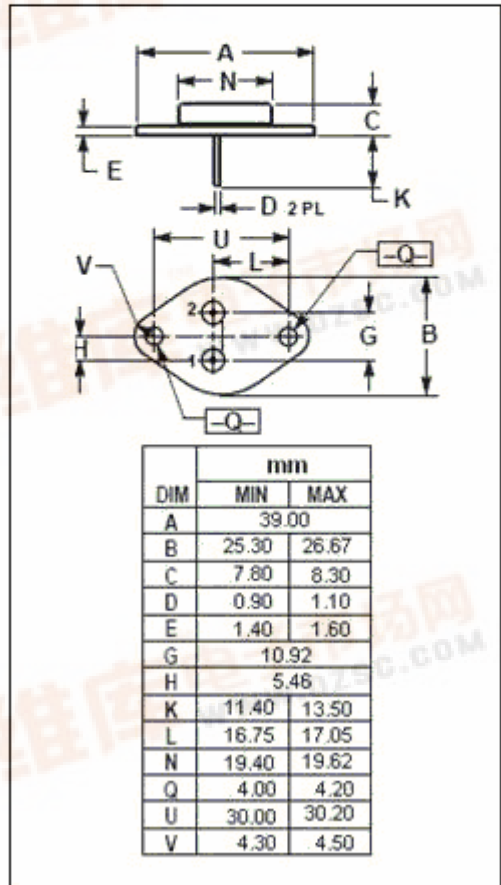
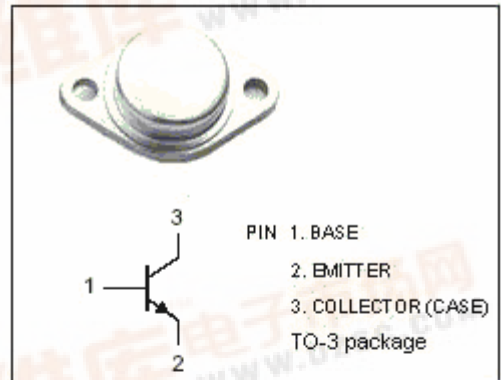
- Designed for converters, inverters, pulse-width-modulated regulators, and a variety of power switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	TIP562	300
		TIP563	400
$V_{CEO(SUS)}$	Collector-Emitter Voltage	TIP562	300
		TIP563	400
$V_{EBO}$	Emitter-Base Voltage	8	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	15	A
$I_B$	Base Current-Continuous	2	A
$P_C$	Collector Power Dissipation @ $T_C=100^\circ\text{C}$	100	W
$T_J$	Junction Temperature	200	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65~200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.0	$^\circ\text{C/W}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	TIP562	$I_C=100\text{mA}; I_B=0$	300			V
		TIP563		400			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C=10\text{A}; I_B=1.66\text{A}$			1.2	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C=15\text{A}; I_B=5\text{A}$			2.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage		$I_C=10\text{A}; I_B=1.66\text{A}$			1.4	V
$I_{CEO}$	Collector Cutoff Current	TIP562	$V_{CE}=270\text{V}; I_B=0$			1.0	mA
		TIP563	$V_{CE}=360\text{V}; I_B=0$			1.0	
$I_{CBO}$	Collector Cutoff Current	TIP562	$V_{CB}=300\text{V}; I_E=0$			0.1	mA
		TIP563	$V_{CB}=400\text{V}; I_E=0$			0.1	
$I_{EBO}$	Emitter Cutoff Current		$V_{EB}=8\text{V}; I_C=0$			5.0	mA
$h_{FE-1}$	DC Current Gain		$I_C=1\text{A}; V_{CE}=4\text{V}$	20			
$h_{FE-2}$	DC Current Gain		$I_C=10\text{A}; V_{CE}=4\text{V}$	8			

## Switching Times

$t_d$	Delay Time	$V_{CC}=180\text{V}; V_{BE}=-5.2\text{V}$ $I_C=10\text{A}; I_{B1}=-I_{B2}=2\text{A}$		0.05		$\mu\text{s}$
$t_r$	Rise Time			0.5		$\mu\text{s}$
$t_{stg}$	Storage Time			1.2		$\mu\text{s}$
$t_f$	Fall Time			0.3		$\mu\text{s}$