

INCHANGE Semiconductor

isc Product Specification

isc Silicon NPN Power Transistors

2N5885/5886

DESCRIPTION

- DC Current Gain-
: $h_{FE} = 20(\text{Min}) @ I_C = 10A$
- Low Saturation Voltage-
: $V_{CE(\text{sat})} = 1.0V(\text{Max}) @ I_C = 15A$
- Complement to Type 2N5883/5884

APPLICATIONS

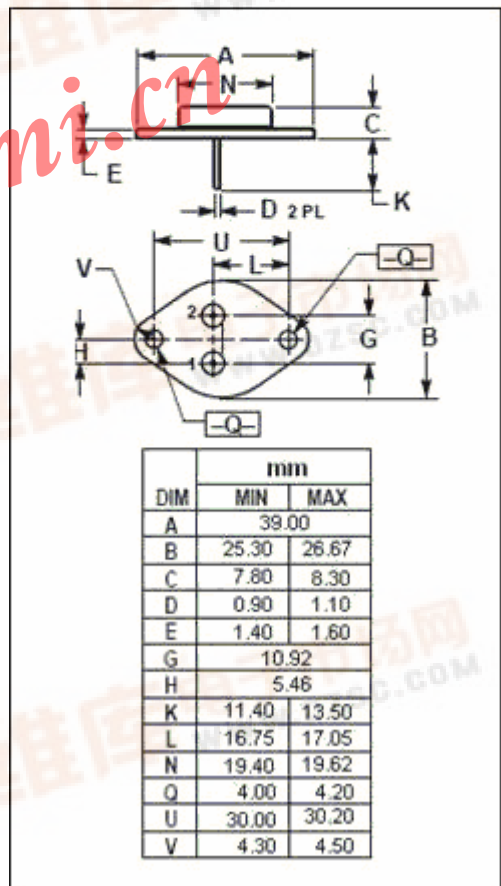
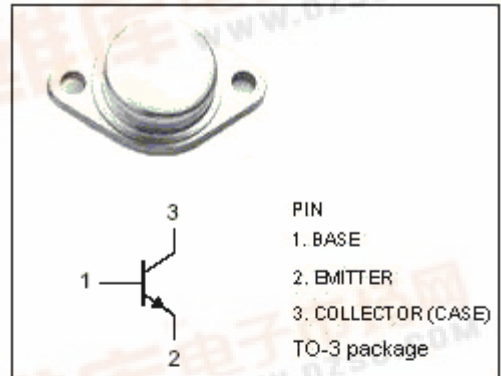
- Designed for general purpose power amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CBO}	Collector-Base Voltage	2N5885	60	V
		2N5886	80	
V_{CEO}	Collector-Emitter Voltage	2N5885	60	V
		2N5886	80	
V_{EBO}	Emitter-Base Voltage	5	V	
I_C	Collector Current-Continuous	25	A	
I_{CM}	Collector Current-Peak	50	A	
I_B	Base Current-Continuous	7.5	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	-65~200	$^\circ\text{C}$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{\text{th j-c}}$	Thermal Resistance, Junction to Case	0.875	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	2N5885	$I_C=200\text{mA}; I_B=0$	60	V
		2N5886		80	
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=15\text{A}; I_B=1.5\text{A}$		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=6.25\text{A}$		4.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=25\text{A}; I_B=6.25\text{A}$		2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=10\text{A}; V_{CE}=4\text{V}$		1.5	V
I_{CEO}	Collector Cutoff Current	2N5885	$V_{CE}=30\text{V}; I_B=0$	2.0	mA
		2N5886		$V_{CE}=40\text{V}; I_B=0$	
I_{CEX}	Collector Cutoff Current	2N5885	$V_{CE}=60\text{V}; V_{BE(off)}=1.5\text{V}$ $V_{CE}=60\text{V}; V_{BE(off)}=1.5\text{V}; T_C=150^\circ\text{C}$	1.0	mA
		2N5886		$V_{CE}=80\text{V}; V_{BE(off)}=1.5\text{V}$ $V_{CE}=80\text{V}; V_{BE(off)}=1.5\text{V}; T_C=150^\circ\text{C}$	
I_{CBO}	Collector Cutoff Current	2N5885	$V_{CB}=60\text{V}; I_E=0$	1.0	mA
		2N5886		$V_{CB}=80\text{V}; I_E=0$	
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$		1.0	mA
h_{FE-1}	DC Current Gain	$I_C=3\text{A}; V_{CE}=4\text{V}$	35		
h_{FE-2}	DC Current Gain	$I_C=10\text{A}; V_{CE}=4\text{V}$	20	100	
h_{FE-3}	DC Current Gain	$I_C=25\text{A}; V_{CE}=4\text{V}$	4		
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=1\text{MHz}$		500	pF
f_T	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=10\text{V}; f_{test}=1\text{MHz}$	4		MHz

Switching Times

t_r	Rise Time	$I_C=10\text{A}; I_{B1}=-I_{B2}=1\text{A}; V_{CC}=30\text{V}$		0.7	μs
t_{stg}	Storage Time			1.0	μs
t_f	Fall Time			0.8	μs