

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5820 2N5822 NPN

2N5821 2N5823 PNP

COMPLEMENTARY SILICON TRANSISTORS

TO-92-18R CASE (CBE)

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5820 series types are epoxy molded complementary silicon small signal transistors manufactured by the epitaxial planar process designed for general purpose amplifier applications where a high collector current rating is required.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

	SYMBOL		UNIT
Collector-Base Voltage	V_{CB0}	70	V
Collector-Emitter Voltage	V_{CES}	70	V
Collector-Emitter Voltage	V_{CE0}	60	V
Emitter-Base Voltage	V_{EB0}	5.0	V
Collector Current	I_C	750	mA
Collector Current (PEAK)	I_{CM}	1000	mA
Power Dissipation	P_D	625	mW
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	1500	mW
Operating and Storage			
Junction Temperature	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	200	$^\circ\text{C}/\text{mW}$
Thermal Resistance	θ_{JC}	83.3	$^\circ\text{C}/\text{mW}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N5820 2N5821		2N5822 2N5823		UNIT
		MIN	MAX	MIN	MAX	
I_{CB0}	$V_{CB}=25\text{V}$		100		100	nA
I_{CB0}	$V_{CB}=25\text{V}, T_A=100^\circ\text{C}$		15		15	μA
I_{EB0}	$V_{EB}=5.0\text{V}$		10		10	μA
BV_{CES}	$I_C=10\mu\text{A}$	70		70		V
BV_{CE0}	$I_C=10\text{mA}$	60		60		V
BV_{EB0}	$I_E=10\mu\text{A}$	5.0		5.0		V
$V_{CE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.75		0.75	V
$V_{BE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.2		1.2	V
$V_{BE}(\text{ON})$	$V_{CB}=2.0\text{V}, I_C=500\text{mA}$	0.60	1.1	0.60	1.1	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=2.0\text{mA}$	60	120	100	200	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	20	-	25	-	
f_T	$V_{CE}=2.0\text{V}, I_C=50\text{mA}, f=20\text{MHz}$	100	-	120	-	MHz
C_{ob}	$V_{CB}=10\text{V}, I_C=0, f=1.0\text{MHz}$		15		15	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_E=0, f=1.0\text{MHz}$		55		55	pF