

# Central<sup>TM</sup> Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA  
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N2857

2N3839

SILICON SMALL SIGNAL RF TRANSISTORS

JEDEC TO-72 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N2857, 2N3839 types are NPN Silicon Small Signal Transistors designed for use in VHF/UHF amplifier, oscillator and converter applications.

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

	SYMBOL		UNIT
Collector-Base Voltage	$V_{CB0}$	30	V
Collector-Emitter Voltage	$V_{CE0}$	15	V
Emitter-Base Voltage	$V_{EB0}$	2.5	V
Collector Current	$I_C$	40	mA
Power Dissipation	$P_D$	200	mW
Power Dissipation @ $T_C=25^{\circ}\text{C}$	$P_D$	300	mW
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 TO +200	$^{\circ}\text{C}$

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

SYMBOL	TEST CONDITIONS	2N2857		2N3839		UNIT
		MIN	MAX	MIN	MAX	
$I_{CB0}$	$V_{CB}=15\text{V}$		10		10	nA
$I_{CBO}$	$V_{CB}=15\text{V}, T_A=150^{\circ}\text{C}$		1.0		1.0	$\mu\text{A}$
$BV_{CB0}$	$I_C=1.0\mu\text{A}$	30		30		V
$BV_{CE0}$	$I_C=3.0\text{mA}$	15		15		V
$BV_{EB0}$	$I_E=10\mu\text{A}$	2.5		2.5		V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=3.0\text{mA}$	30	150	30	150	-
$f_T$	$V_{CE}=6.0\text{V}, I_C=5.0\text{mA}, f=100\text{MHz}$	1.0	1.9	1.0	2.0	GHz
$C_{cb}$	$V_{CB}=10\text{V}, f=0.1\text{ TO }1.0\text{MHz}$		1.0		1.0	pf
$C_{eb}$	$V_{EB}=0.5\text{V}, f=1.0\text{MHz}$		1.4 TYP		1.4 TYP	pf
NF	$V_{CE}=6.0\text{V}, I_C=1.5\text{mA}, f=450\text{MHz}, R_s=50\Omega$		4.5		3.9	dB
$rb' C_c$	$V_{CB}=6.0\text{V}, I_C=2.0\text{mA}, f=31.9\text{MHz}$	4.0	15	1.0	15	ps
$G_{pe}$	$V_{CE}=6.0\text{V}, I_C=1.5\text{mA}, f=450\text{MHz}$	12.5	19	12.5	19	dB
$P_{out}$	$V_{CB}=10\text{V}, I_C=12\text{mA}, f=500\text{MHz}$	30		30		mW