

MICRO

查询2N2222供应商

建多邦, 专业PCB打样工厂, 24小时加急出货

2N2222
PN2222
2N2222A
PN2222A

THE 2N2222, 2N2222A, PN2222, PN2222A ARE NPN SILICON PLANAR EPITAXIAL TRANSISTORS FOR GENERAL PURPOSE AMPLIFIERS AND MEDIUM SPEED SWITCHING APPLICATIONS. THEY ARE COMPLEMENTARY TO THE PNP TYPE 2N2907, 2N2907A, PN2907, PN2907A RESPECTIVELY. THE 2N2222, 2N2222A ARE PACKED IN TO-18. THE PN2222, PN2222A ARE PACKED IN TO-92A.

CASE TO-18



CBE

CASE TO-92A



EBC

2N2222
2N2222A

PN2222
PN2222A

ABSOLUTE MAXIMUM RATINGS

		2N2222	2N2222A	PN2222	PN2222A
Collector-Base Voltage	V_{CBO}	60V	75V	60V	75V
Collector-Emitter Voltage	V_{CEO}	30V	40V	30V	40V
Emitter-Base Voltage	V_{EBO}	5V	6V	5V	6V
Collector Current	I_C	0.8A	0.8A	0.8A	0.8A
Total Power Dissipation ($T_C \leq 25^\circ C$)	P_{tot}	1.8W	1.8W	1.2W	1.2W
($T_A \leq 25^\circ C$)		500mW	500mW	500mW	500mW
Junction Temperature	T_j	175°C	175°C	150°C	150°C
Storage Temperature Range	T_{stg}	-65 to 200°C		-55 to 150°C	

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

PARAMETER	SYMBOL	2N2222 PN2222 MIN MAX	2N2222A PN2222A MIN MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	BV_{CBO}	60	75	V	$I_C = 0.01mA$ $I_E = 0$
Collector-Emitter Breakdown Voltage	$LV_{CEO} *$	30	40	V	$I_C = 10mA$ $I_B = 0$
Emitter-Base Breakdown Voltage	BV_{EBO}	5	6	V	$I_E = 0.01mA$ $I_C = 0$
Collector Cutoff Current	I_{CBO}	10	10	nA	$V_{CB} = 50V$ $I_E = 0$
				nA	$V_{CB} = 60V$ $I_E = 0$
				μA	$V_{CB} = 50V$ $I_E = 0$ $T_A = 150^\circ C$
				μA	$V_{CB} = 60V$ $I_E = 0$ $T_A = 150^\circ C$
Collector Cutoff Current	I_{CEV}		10	nA	$V_{CE} = 60V$ $V_{EB} = 3V$
Emitter Cutoff Current	I_{EBO}	10	10	nA	$V_{EB} = 3V$ $I_C = 0$
Base Cutoff Current	I_{BL}		20	nA	$V_{CE} = 60V$ $V_{EB} = 3V$

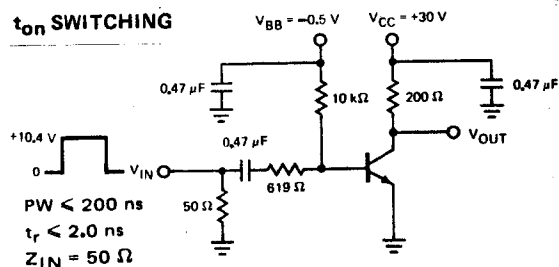
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PARAMETER	SYMBOL	2N2222 PN2222		2N2222A PN2222A		UNIT	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$ *		0.4		0.3	V	$I_C=150mA$ $I_B=15mA$
			1.6		1.0	V	$I_C=500mA$ $I_B=50mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$ *		1.3	0.6	1.2	V	$I_C=150mA$ $I_B=15mA$
			2.6		2.0	V	$I_C=500mA$ $I_B=50mA$
D.C. Current Gain	H_{FE} *	35 50 75 100 300 30 50		35 50 75 100 300 40 50 35			$I_C=0.1mA$ $V_{CE}=10V$
							$I_C=1mA$ $V_{CE}=10V$
							$I_C=10mA$ $V_{CE}=10V$
							$I_C=150mA$ $V_{CE}=10V$
							$I_C=500mA$ $V_{CE}=10V$
							$I_C=150mA$ $V_{CE}=1V$
							$I_C=10mA$ $V_{CE}=10V$ $T_A=-55^{\circ}C$
Current Gain-Bandwidth Product	f_T	250		300		MHz	$I_C=20mA$ $V_{CE}=20V$
Collector-Base Capacitance	C_{ob}		8		8	pF	$V_{CB}=10V$ $I_E=0$ $f=100kHz$
Emitter-Base Capacitance	C_{ib}		25		25	pF	$V_{EB}=0.5V$ $I_C=0$ $f=100kHz$
Collector-Base Time Constant	$C_{orbb'}$				150	pS	$I_C=20mA$ $V_{CE}=20V$ $f=31.8MHz$
Noise Figure	NF				4	dB	$I_C=0.1mA$ $V_{CE}=10V$ $f=1kHz$ $R_G=1k\Omega$
Input Impedance	h_{ie}			2	8	K Ω	$I_C=1mA$ $V_{CE}=10V$ $f=1kHz$
				0.25	1.25	K Ω	$I_C=10mA$ $V_{CE}=10V$ $f=1kHz$
Voltage Feedback Ratio	h_{re}				8	$\times 10^{-4}$	$I_C=1mA$ $V_{CE}=10V$ $f=1kHz$
					4	$\times 10^{-4}$	$I_C=10mA$ $V_{CE}=10V$ $f=1kHz$
Small Signal Current Gain	h_{fe}			50	300		$I_C=1mA$ $V_{CE}=10V$ $f=1kHz$
				75	375		$I_C=10mA$ $V_{CE}=10V$ $f=1kHz$
Output Admittance	h_{oe}			5	35	μS	$I_C=1mA$ $V_{CE}=10V$ $f=1kHz$
				25	200	μS	$I_C=10mA$ $V_{CE}=10V$ $f=1kHz$
Delay Time	t_d				10	nS	$I_C=150mA$ $I_{B1}=15mA$ $V_{CC}=30V$
Rise Time	t_r				25	nS	$I_C=150mA$ $I_{B1}=15mA$ $V_{CC}=30V$
Storage Time	t_s				225	nS	$I_C=150mA$ $I_{B1}=-I_{B2}=15mA$ $V_{CC}=30V$
Fall Time	t_f				60	nS	$I_C=150mA$ $I_{B1}=-I_{B2}=15mA$ $V_{CC}=30V$

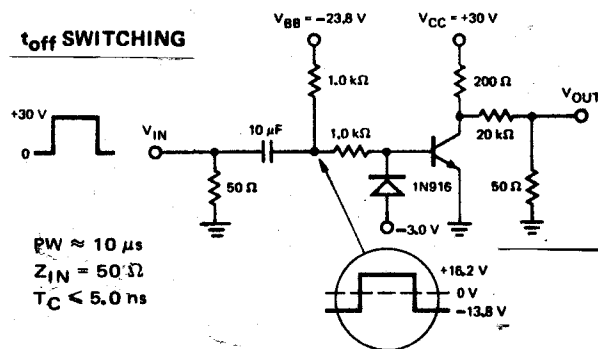
* Pulse Test : Pulse Width=0.3mS, Duty Cycle=1%

SWITCHING TIME TEST CIRCUITS

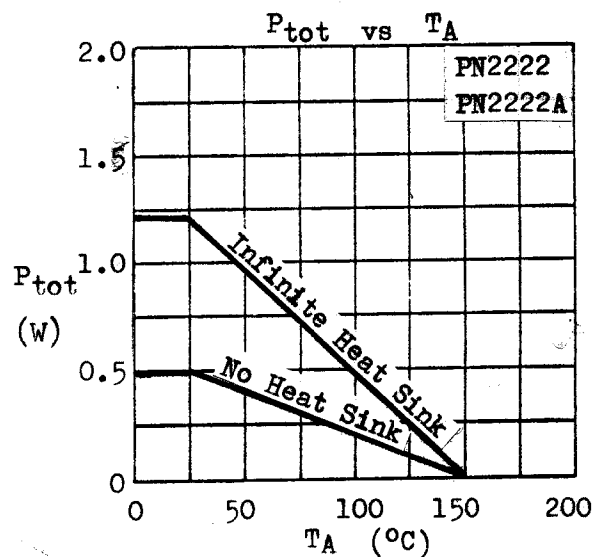
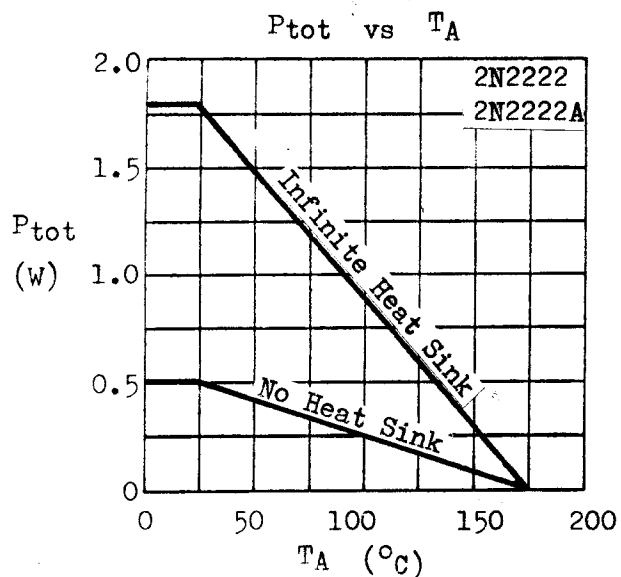
t_{on} SWITCHING



t_{off} SWITCHING



All waveforms are monitored on an oscilloscope with $R_{in} \geq 100 k\Omega$,
 $C_{in} \leq 12 pF$, $t_r \leq 5 nS$.



2N2222/A
PN2222/A

TYPICAL CHARACTERISTICS

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

