



M28S

NPN SILICON TRANSISTOR

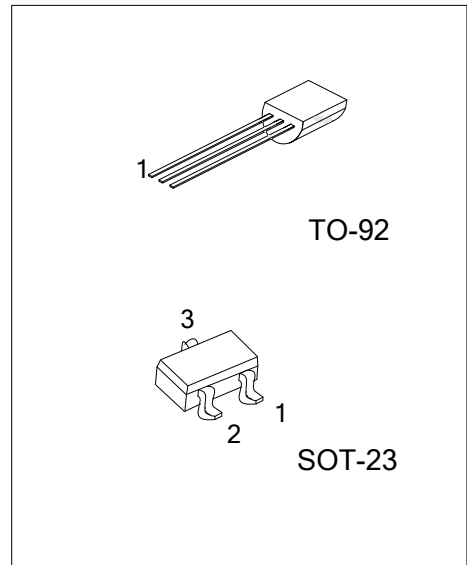
AUDIO OUTPUT DRIVER AMPLIFIER

■ FEATURES

- * Excellent HFE Linearity
- * High DC Current Gain
- * High Power Dissipation

■ APPLICATION

- * Audio Output Driver Amplifier
- * General Purpose Switch

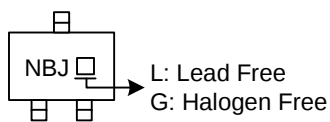


■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
M28S-x-AE3-R	M28SL-x-AE3-R	M28SG-x-AE3-R	SOT-23	E	C	B	Tape Reel
M28S-x-T92-B	M28SL-x-T92-B	M28SG-x-T92-B	TO-92	E	C	B	Tape Box
M28S-x-T92-K	M28SL-x-T92-K	M28SG-x-T92-K	TO-92	E	C	B	Bulk
M28S-x-T92-R	M28SL-x-T92-R	M28SG-x-T92-R	TO-92	E	C	B	Tape Reel

M28SL-x-AE3-R (1)Packing Type (2)Package Type (3)Rank (4)Lead Free	(1) B: Tape Box, K: Bulk, R: Tape Reel (2) AB3: SOT-23, T92: TO-92 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn
---	---

■ MARKING



■ ABSOLUTE MAXIMUM RATING ($T_a=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	1.25	A
Base Current	I_B	0.4	A
Power Dissipation ($T_a=25^\circ\text{C}$)	P_D	850	mW
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Voltage	V_{CBO}	$I_C=0.1\text{mA}$	40			V
Collector-Emitter Voltage	V_{CEO}	$I_C=1\text{mA}$	20			V
Emitter-Base Voltage	V_{EBO}	$I_E=0.1\text{mA}$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=35\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	nA
ON CHARACTERISTICS						
DC Current Gain (Note)	h_{FE1}	$V_{CE}=1\text{V}, I_C=1\text{mA}$	290			
	h_{FE2}	$V_{CE}=1\text{V}, I_C=0.1\text{A}$	300		1000	
	h_{FE3}	$V_{CE}=1\text{V}, I_C=0.3\text{A}$	300			
	h_{FE4}	$V_{CE}=1\text{V}, I_C=0.5\text{A}$	300			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=600\text{mA}, I_B=20\text{mA}$			0.55	V
SMALL-SIGNAL CHARACTERISTICS						
Current Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=1\text{MHz}$	100			MHz
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		9		pF

■ CLASSIFICATION OF h_{FE2}

RANK	B	C	D
RANGE	300-550	500-700	650-1000

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.