



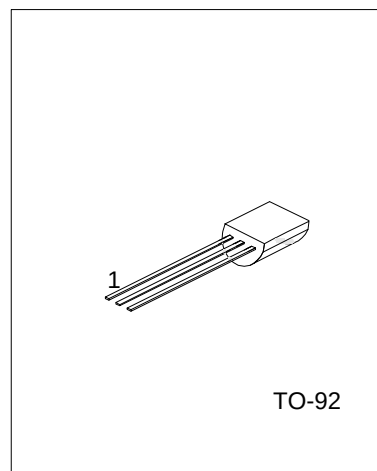
9013

NPN EPITAXIAL SILICON TRANSISTOR

1W OUTPUT AMPLIFIER OF PORTABLE RADIOS IN CLASS B PUSH-PULL OPERATION

■ FEATURES

- * High total power dissipation. (625mW)
- * High collector current. (500mA)
- * Excellent h_{FE} linearity.
- * Complementary to UTC 9012



■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
9013-x-T92-B	9013L-x-T92-B	9013G-x-T92-B	TO-92	E	B	C	Tape Box
9013-x-T92-K	9013L-x-T92-K	9013G-x-T92-K	TO-92	E	B	C	Bulk
9013-x-T92-R	9013L-x-T92-R	9013G-x-T92-R	TO-92	E	B	C	Tape Reel

Note: xx: Output Voltage, refer to Marking Information.

9013L-x-T92-B	(1) Packing Type	(1) R: Tape Box
	(2) Package Type	(2) T92: TO-92
	(3) Rank	(3) x: refer to Classification of h_{FE}
	(4) Lead Free	(4) G: Halogen Free L: Lead Free, Blank: Pb/Sn

■ ABSOLUTE MAXIMUM RATING (Ta=25°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}	5	V
Collector current	I_C	500	mA
Collector dissipation	P_C	625	mW
Junction Temperature	T_J	125	°C
Storage Temperature	T_{STG}	-55 ~ +150	°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 (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV_{CBO}	$I_C = -100\mu A, I_E = 0$	40			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	20			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	5			V
Collector cutoff current	I_{CBO}	$V_{CB} = 25V, I_E = 0$			100	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = 3V, I_C = 0$			100	nA
DC current gain	h_{FE1}	$V_{CE} = 1V, I_C = 50mA$	64	120	300	
	h_{FE2}	$V_{CE} = 1V, I_C = 500mA$	40	120		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500mA, I_B = -50mA$		0.16	0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -500mA, I_B = -50mA$		0.91	1.2	V
Base-emitter on voltage	$V_{BE(on)}$	$V_{CE} = 1V, I_C = 10mA$	0.6	0.67	0.7	V

■ CLASSIFICATION OF h_{FE1}

RANK	D	E	F	G	H	I
RANGE	64-91	78-112	96-135	112-166	144-202	190-300

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