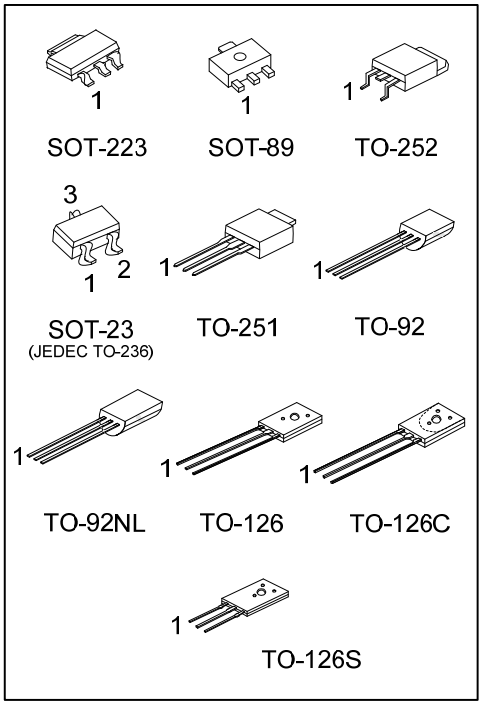
2SD669/A

NPN SILICON TRANSISTOR

BIPOLAR POWER GENERAL PURPOSE TRANSISTOR



■ APPLICATIONS

* Low frequency power amplifier complementary pair with UTC 2SB649/A

■ ORDERING INFORMATION

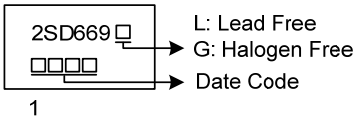
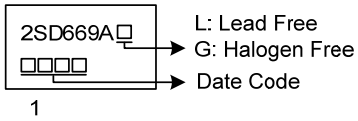
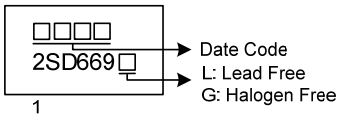
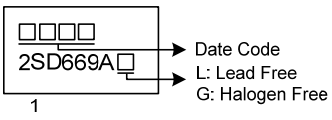
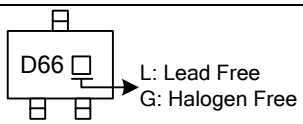
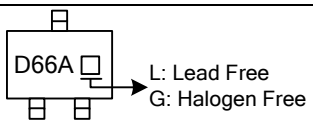
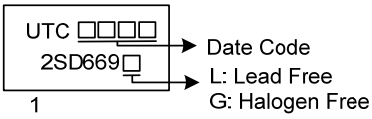
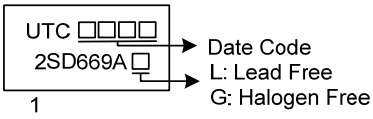
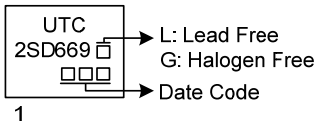
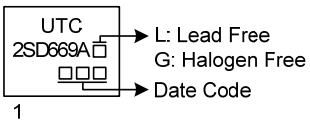
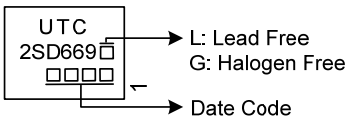
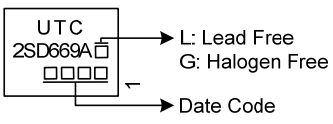
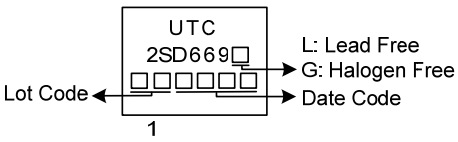
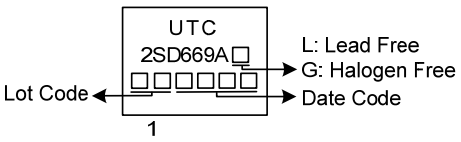
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SD669xL-x-AA3-R	2SD669xG-x-AA3-R	SOT-223	B	C	E	Tape Reel
2SD669xL-x-AB3-R	2SD669xG-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD669xL-x-AE3-R	2SD669xG-x-AE3-R	SOT-23	E	B	C	Tape Reel
2SD669xL-x-AE3-6-R	2SD669xG-x-AE3-6-R	SOT-23	B	E	C	Tape Reel
2SD669xL-x-T60-K	2SD669xG-x-T60-K	TO-126	E	C	B	Bulk
2SD669xL-x-T60-T	2SD669xG-x-T60-T	TO-126	E	C	B	Tube
2SD669xL-x-T6C-K	2SD669xG-x-T6C-K	TO-126C	E	C	B	Bulk
2SD669xL-x-T6C-T	2SD669xG-x-T6C-T	TO-126C	E	C	B	Tube
2SD669xL-x-T6S-K	2SD669xG-x-T6S-K	TO-126S	E	C	B	Bulk
2SD669xL-x-T6S-T	2SD669xG-x-T6S-T	TO-126S	E	C	B	Tube
2SD669xL-x-T92-B	2SD669xG-x-T92-B	TO-92	E	C	B	Tape Box
2SD669xL-x-T92-K	2SD669xG-x-T92-K	TO-92	E	C	B	Bulk
2SD669xL-x-T9N-B	2SD669xG-x-T9N-B	TO-92NL	E	C	B	Tape Box
2SD669xL-x-T9N-K	2SD669xG-x-T9N-K	TO-92NL	E	C	B	Bulk
2SD669xL-x-TM3-T	2SD669xG-x-TM3-T	TO-251	B	C	E	Tube
2SD669xL-x-TN3-R	2SD669xG-x-TN3-R	TO-252	B	C	E	Tape Reel

Note: Pin AssiLnment: B: Base C: Collector E: Emitter

2SD669xG-x-AE3-6-R
- (1)Packing Type
- (2)Pin Assignment
- (3)Package Type
- (4)Rank
- (5)Green Package
- (6) Collector-Emitter Voltage

(1) B: Tape Box, K: Bulk, R: Tape Reel, T: Tube
(2) refer to Pin Assignment
(3) AA3: SOT-223, AB3: SOT-89, AE3: SOT-23
T60: TO-126, T6C: TO-126C, T6S: TO-126S
TM3: TO-251, TN3: TO-252, T92: TO-92
T9N: TO-92NL
(4) x: refer to Classification of h_{FE1}
(5) G: Halogen Free and Lead Free, L: Lead Free
(6) A: 160V, Blank: 120V

■ MARKINL INFORMATION

PACKALE	MARKINL	
	2SD669	2SD669A
SOT-223		
SOT-89		
SOT-23		
TO-126 TO-126C TO-126S		
TO-92		
TO-92NL		
TO-251 TO-252		

■ ABSOLUTE MAXIMUM RATINL (T_A=25°C unless otherwise specified)

PARAMETER		SYMBOL	RATINLS	UNIT
Collector-Base VoltaLe		V_{CBO}	180	V
Collector-Emitter VoltaLe	2SD669	V_{CEO}	120	V
	2SD669A		160	
Emitter-Base VoltaLe		V_{EBO}	5	V
Collector Current		I_C	1.5	A
Collector Peak Current		$I_{C(PEAK)}$	3	A
Base Current		I_B	0.5	A
Power Dissipation	SOT-223/SOT-89	P_D	0.5	W
	SOT-23		0.35	W
	TO-126/TO-126S		1.3	W
	TO-126C		1	W
	TO-92/TO-92NL		0.6	W
	TO-251/TO-252		2	W
Junction Temperature		T_J	+150	°C
StoraLe Temperature		T_{STL}	-40 ~ +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.

■ HERMAL DATA

PARAMETER		SYMBOL	RATINLS	UNIT
Junction to Case	SOT-89	θ_{JC}	38	°C/W
	SOT-223		14	
	SOT-23		110	
	TO-92/TO-92NL		80	
	TO-126/TO-126S		6.25	
	TO-126C		10	
	TO-251/TO-252		4.5	

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Collector to Base Breakdown VoltaLe		BV_{CBO}	I_C=1mA, I_E=0	180			V
Collector to Emitter Breakdown VoltaLe	2SD669	BV_{CEO}	I_C=10mA, R_{BE}=∞	120			V
	2SD669A			160			
Collector to Emitter Breakdown VoltaLe (V_{BE}=0V)	2SD669	BV_{CES}	I_C=1mA, V_{BE}=0V	120			V
	2SD669A			160			
Emitter to Base Breakdown VoltaLe		BV_{EBO}	I_E=1mA, I_C=0	5			V
Collector Cut-off Current		I_{CBO}	V_{CB}=160V, I_E=0			10	μA
Emitter Cutoff Current		I_{EBO}	V_{EB}=4V, I_C=0			10	μA
ON CHARACTERISTICS							
DC Current Lain		h_{FE1}	V_{CE}=5V, I_C=150mA (Note)	60		320	
		h_{FE2}	V_{CE}=5V, I_C=500mA (Note)	30			
Collector-Emitter Saturation VoltaLe		$V_{CE(SAT)}$	I_C=600mA, I_B=50mA (Note)			1	V
Base-Emitter Saturation VoltaLe		$V_{BE(SAT)}$	I_C=600mA, I_B=50mA (Note)			1.2	V
Base-Emitter VoltaLe		V_{BE}	V_{CE}=5V, I_C=150mA (Note)			1.5	V
DYNAMIC CHARACTERISTICS							
Current Lain Bandwidth Product		f_T	V_{CE}=5V, I_C=150mA (Note)		140		MHz
Output Capacitance		C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		14		pF
SWITCHINL CHARACTERISTICS							
Rise Time		t_R	V_{CC}=50V, I_C=0.5A, I_{B1}=I_{B2}=10mA, t_P=25μs, Duty Cycle≤1%		0.5		μs
StoraLe Time		t_S			1.5		
Fall Time		t_F			0.7		

Note: Pulse test.

■ CLASSIFICATION OF h_{FE1}

RANK	B	C	D
RANLE	60-120	100-200	160-320

■ TYPICAL CHARACTERISTICS