优尚

YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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Features

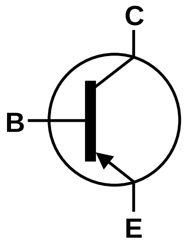
- BV_{CEO} > -60V
- I_C = -150mA Collector Current
- Ultra-Small Surface Mount Package
- Complementary NPN Type Available (2DC4617Q,R,S)

Mechanical Data

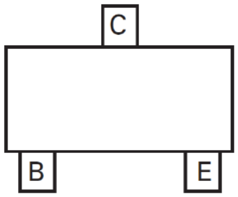
- Case: SOT523
- Case Material: Molded Plastic. “Green” Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.002 grams (Approximate)

SOT523

Top View



Device Symbol



Pin-Out Top View

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current - Continuous (Note 5)	I_C	-150	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5) T_A = +25°C	P_D	150	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Notes:
5. For a device mounted with the collector lead on minimum recommended pad layout 1oz copper that is on a single-sided 1.6mm FR-4 PCB; device is measured under still air conditions whilst operating in a steady-state.
6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Thermal Characteristics and Derating Information

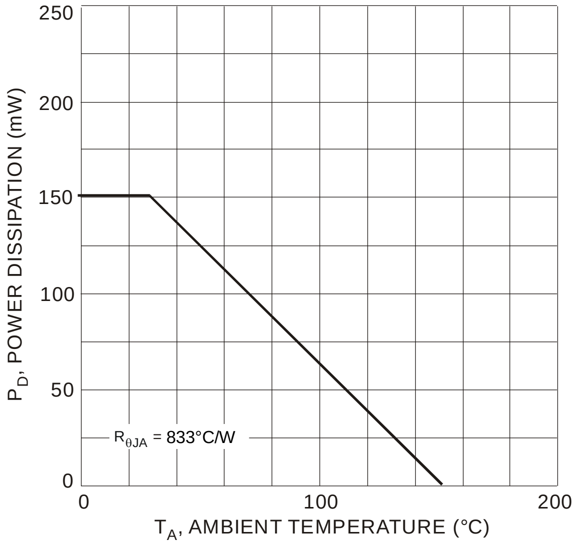


Fig. 1 Power Dissipation
vs. Ambient Temperature (Note 5)

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 7)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-60	—	—	V	I_C = -50μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-50	—	—	V	I_C = -1mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6	—	—	V	I_E = -50μA, I_C = 0
Collector Cutoff Current	I_{CBO}	—	—	-100	nA	V_{CB} = -60V
Emitter Cutoff Current	I_{EBO}	—	—	-100	nA	V_{EB} = -6V
ON CHARACTERISTICS (Note 7)						
DC Current Gain NK-2DA1774Q NK-2DA1774R NK-2DA1774S	h_{FE}	120 180 270	— — —	270 390 560	—	V_{CE} = -6V, I_C = -1mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	—	-0.5	V	I_C = -50mA, I_B = -5mA
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{obo}	—	4.0	5.0	pF	V_{CB} = -12V, f = 1MHz, I_E = 0
Current Gain-Bandwidth Product	f_T	—	140	—	MHz	V_{CE} = -12V, I_C = -2mA, f = 30MHz

Notes: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

Typical Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

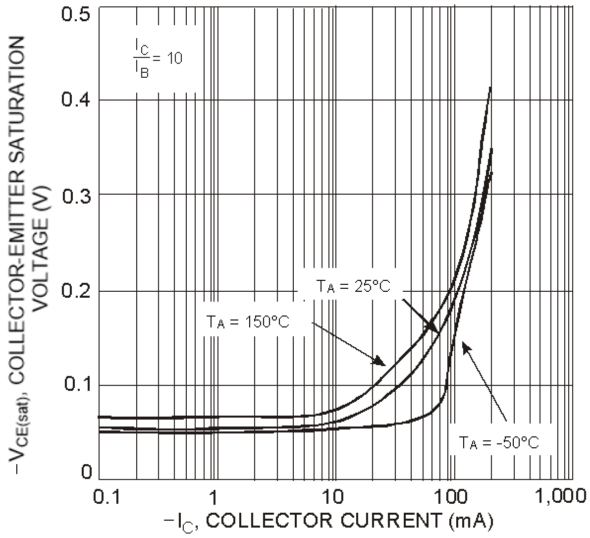


Fig. 2 Typical Collector-Emitter Saturation Voltage vs. Collector Current

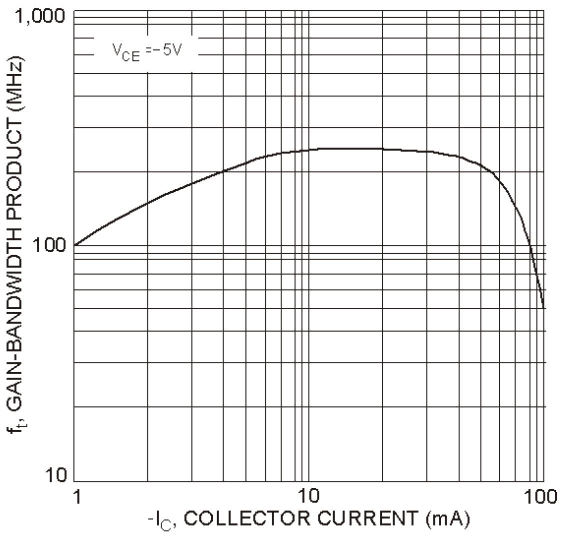
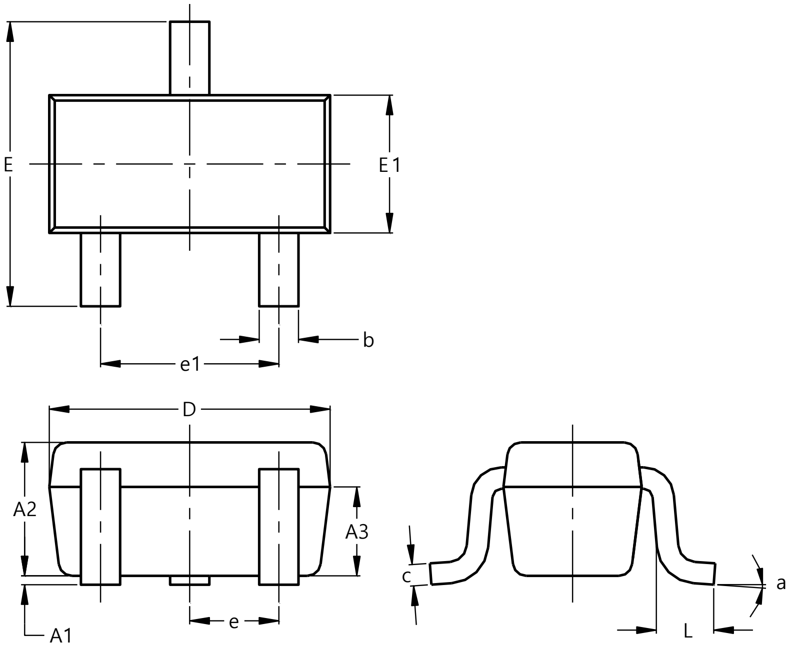


Fig. 3 Typical Gain-Bandwidth Product vs. Collector Current

Package Outline Dimensions

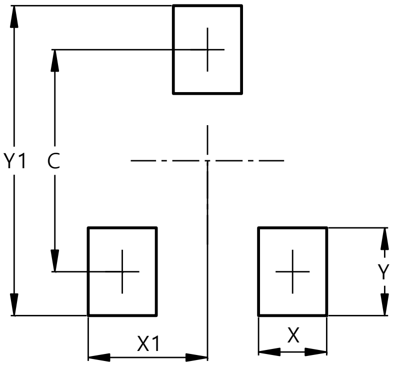
SOT523



SOT523			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.60	0.80	0.75
A3	0.45	0.65	0.50
b	0.15	0.30	0.22
c	0.10	0.20	0.12
D	1.50	1.70	1.60
E	1.45	1.75	1.60
E1	0.75	0.85	0.80
e	0.50 BSC		
e1	0.90	1.10	1.00
L	0.20	0.40	0.33
a	0°	--	8°
All Dimensions in mm			

Suggested Pad Layout

SOT523



Dimensions	Value (in mm)
C	1.29
X	0.40
X1	0.70
Y	0.51
Y1	1.80