



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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企业微信二维码



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Features

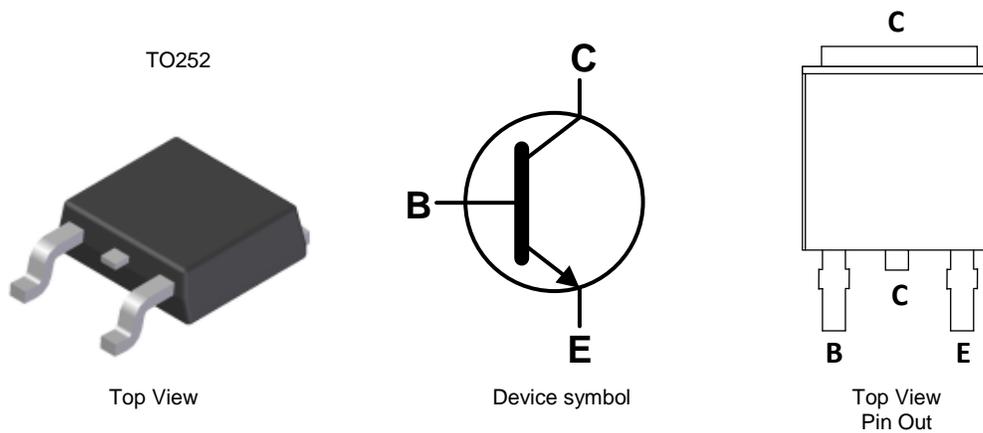
- $BV_{CEO} > 150V$
- $h_{FE} > 100$ for $I_C = 150mA$, $V_{CE} = 0.25V$
- $I_C (cont) = 1A$

Applications

- LED TV Backlight

Mechanical Data

- Case: TO252 (DPAK)
- 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 ③
- Weight: 0.34 grams (Approximate)



Absolute Maximum Ratings

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

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	150	V
Collector-Emitter Voltage	V _{CEO}	150	V
Emitter-Base Voltage	V _{EBO}	7	V
Continuous Collector Current	I _C	1	A
Peak Pulse Current	I _{CM}	3	A
Base Current	I _B	500	mA

Thermal Characteristics

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

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	3.8	W
Thermal Resistance, Junction to Ambient (Note 6)	R _{θJA}	33	°C/W
Thermal Resistance, Junction to Leads (Note 7)	R _{θJL}	12	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

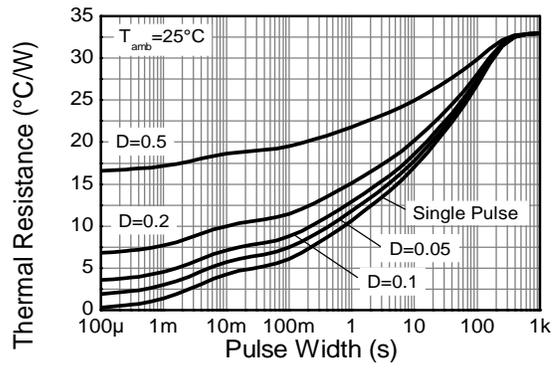
ESD Ratings

 (Note 8)

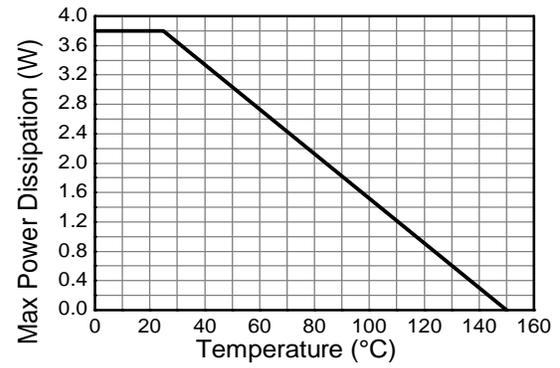
Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

- Notes:
6. For a device mounted with the exposed collector pad on 50mm x 50mm, 2oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in a steady-state.
 7. Thermal resistance from junction to solder-point (on the exposed collector pad).
 8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

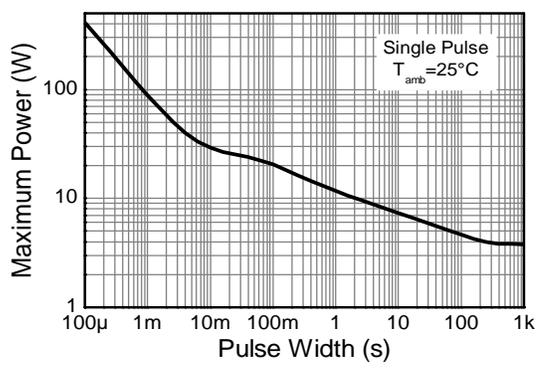
Thermal Characteristics and Derating Information



Transient Thermal Impedance



Derating Curve



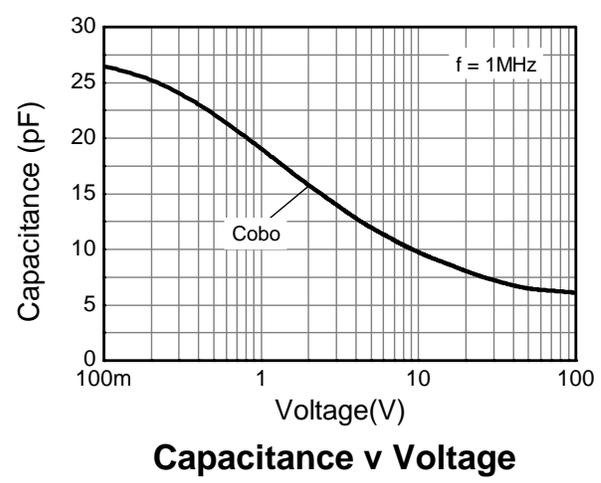
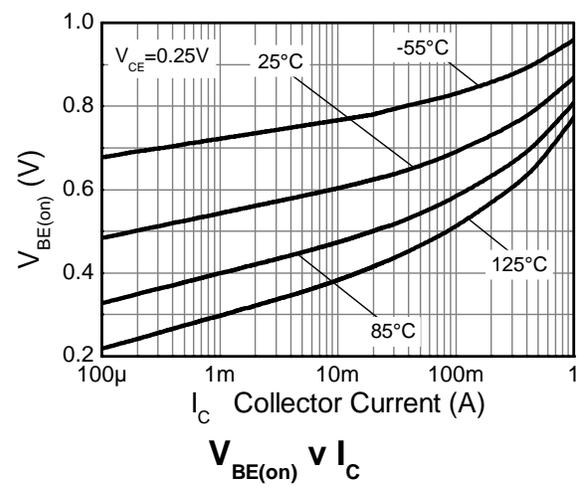
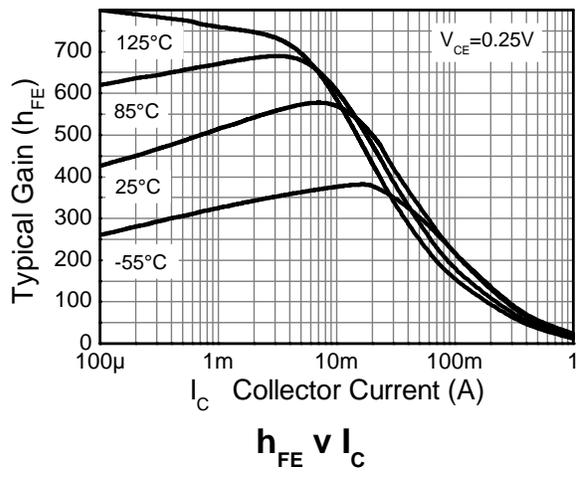
Pulse Power Dissipation

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

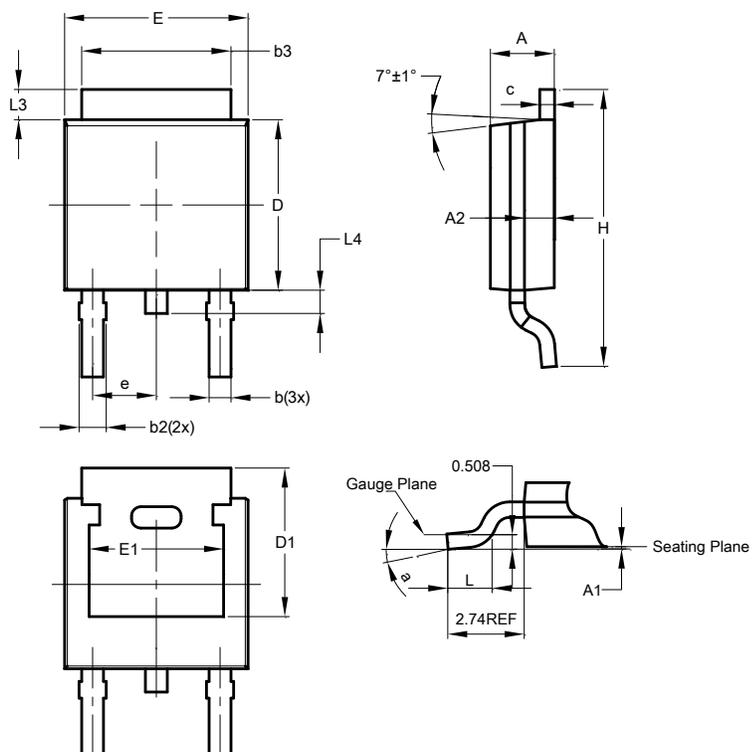
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage (Note 9)	BV _{CBO}	150	-	-	V	I _C = 0.1mA
Collector-Emitter Breakdown Voltage (Note 9)	BV _{CEO}	150	175	-	V	I _C = 10mA
Emitter-Base Breakdown Voltage (Note 9)	BV _{EBO}	7	-	-	V	I _E = 0.1mA
Collector – Emitter Cut-off Current	I _{CES}	-	-	50	nA	V _{CE} = 150V
Collector Cut-off Current	I _{CBO}	-	-	50	nA	V _{CB} = 150V
Emitter Cut-off Current	I _{EBO}	-	-	50	nA	V _{EB} = 7V
Static Forward Current Transfer Ratio (Note 9)	h _{FE}	60 100	- -	- -	-	I _C = 85mA, V _{CE} = 0.20V I _C = 150mA, V _{CE} = 0.25V
Collector-Emitter Saturation Voltage (Note 9)	V _{CE(sat)}	-	-	0.25	V	I _C = 100mA, I _B = 5mA
Base-Emitter Saturation Voltage (Note 9)	V _{BE(sat)}	-	-	0.95	V	I _C = 100mA, I _B = 5mA
Base-Emitter Turn-On Voltage (Note 9)	V _{BE(on)}	-	0.71	0.95	V	I _C = 150mA, V _{CE} = 0.25V
Delay Time	t _(d)	-	512	-	ns	V _{CC} = 120V, I _C = 150mA, -I _{B2} = 1.5mA, V _{CE(ON)} = 0.25V
Rise Time	t _(r)	-	426	-	ns	
Storage Time	t _(s)	-	3413	-	ns	
Fall Time	t _(f)	-	321	-	ns	
Storage Time	t _(s)	-	65	-	ns	V _{CC} = 120V, I _C = 150mA, -I _{B2} = 1.5mA, V _{CE(ON)} = 4V
Fall Time	t _(f)	-	294	-	ns	

Note: 9. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤ 2%.

Typical Electrical Characteristics

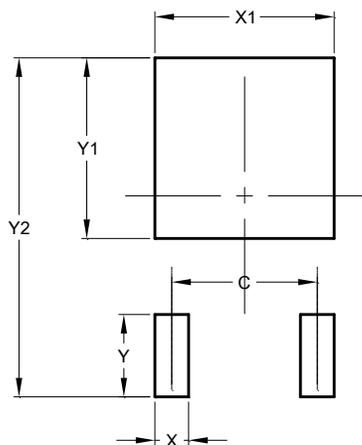


Package Outline Dimensions



TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	-
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700