

Features

30V, 200mA, $R_{DS(ON)} = 5\Omega @ V_{GS} = 10V$

Improved dv/dt capability

Fast switching

Green Device Available

V_{DSS} 30 V
 I_D 0.2 A
 $R_{DS(ON)}$ 5 Ω

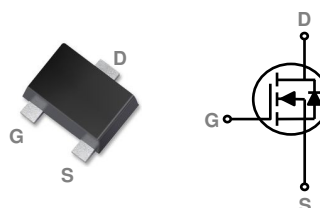
Application

Notebook

Load Switch

Battery Protection

Hand-held Instruments



SOT-723

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum ratings ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current – Continuous ($T_a = 25^\circ\text{C}$)	200	mA
	Drain Current – Continuous ($T_a = 70^\circ\text{C}$)	180	mA
I_{DM}	Drain Current – Pulsed ¹	1.2	A
P_D	Power Dissipation ($T_c = 25^\circ\text{C}$)	313	mW
	Power Dissipation – Derate above 25°C	2.5	mW/ $^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction to ambient	---	800	$^\circ\text{C}/\text{W}$

RATING AND CHARACTERISTIC CURVES

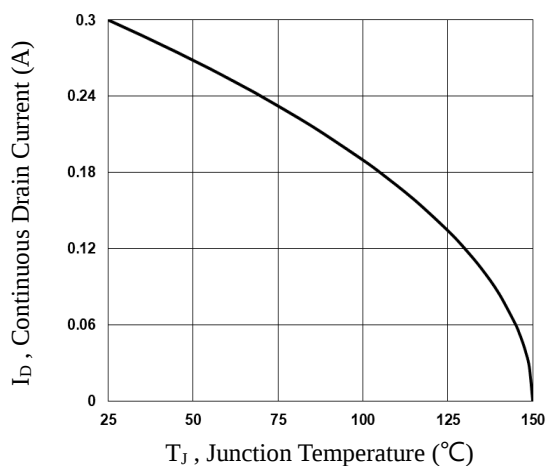


Fig.1 Continuous Drain Current vs. T_j

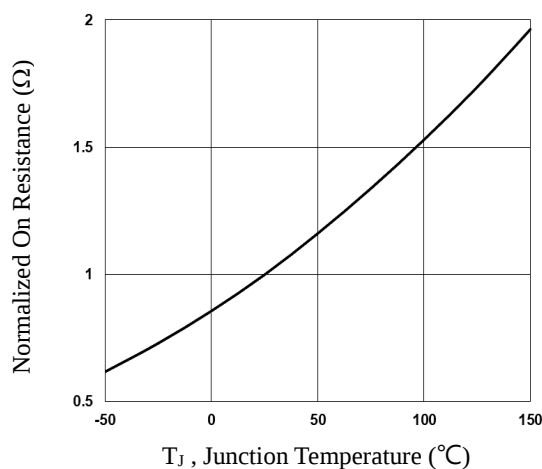


Fig.2 Normalized $R_{DS(on)}$ vs. T_j

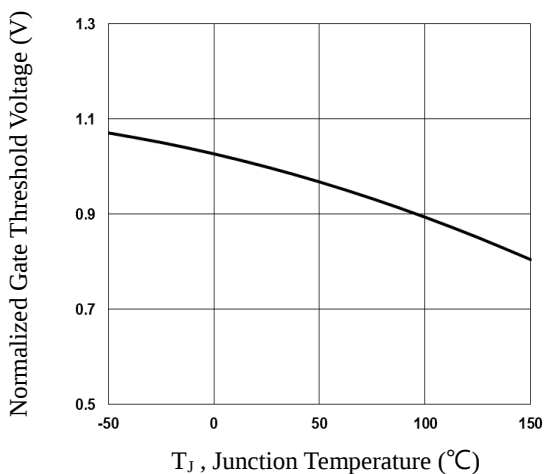


Fig.3 Normalized V_{th} vs. T_j

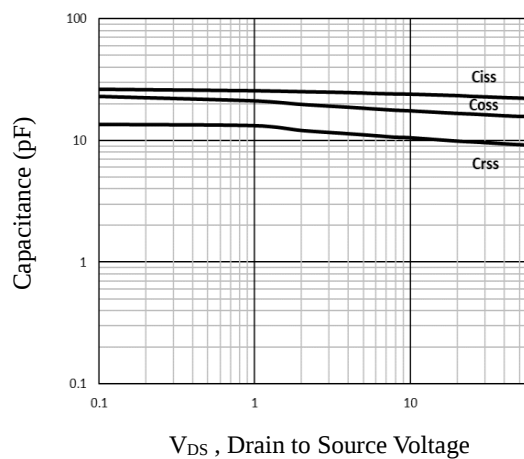


Fig.4 Capacitance Characteristics

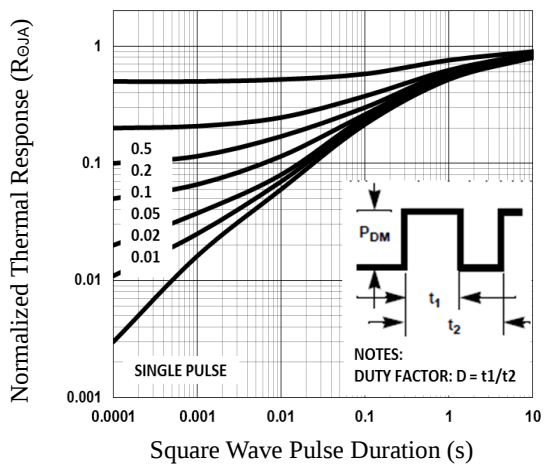


Fig.5 Normalized Transient Response

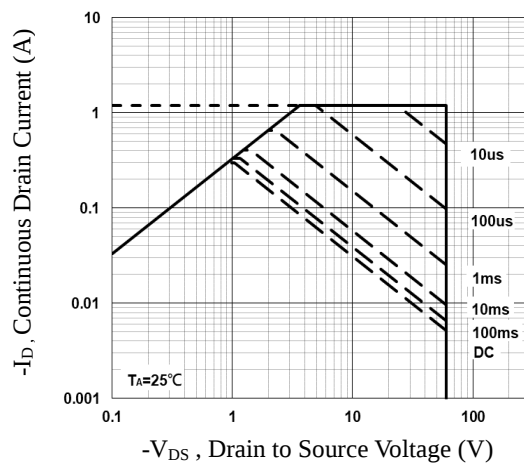


Fig.6 Maximum Safe Operation Area

RATING AND CHARACTERISTIC CURVES

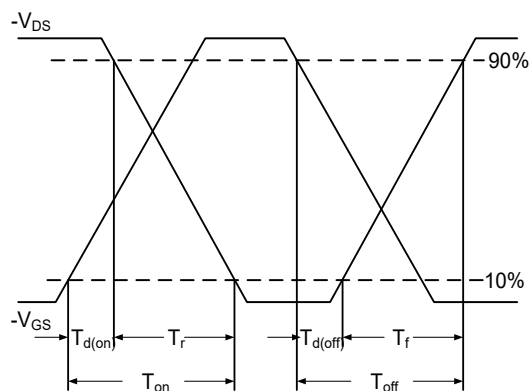


Fig.7 Switching Time Waveform

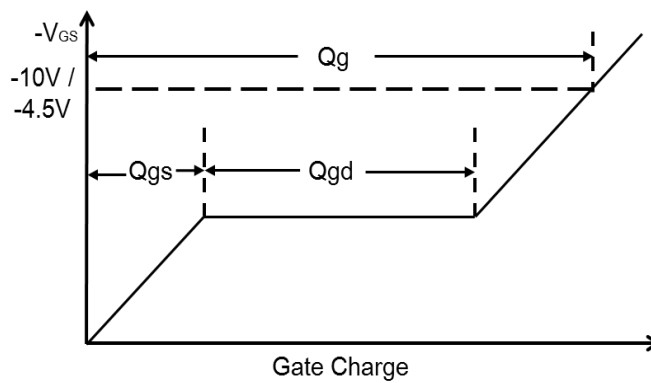
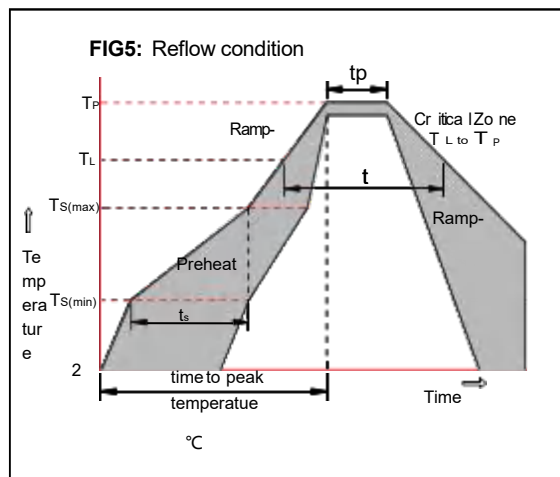


Fig.8 Gate Charge Waveform

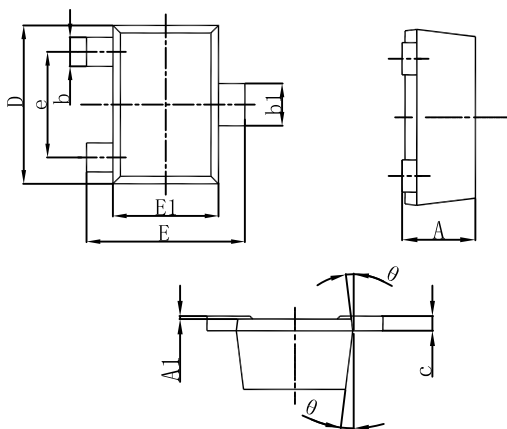
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

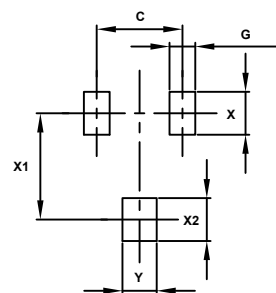


Package Dimensions & Suggested Pad Layout

SOT-723 Package Outline Dimensions



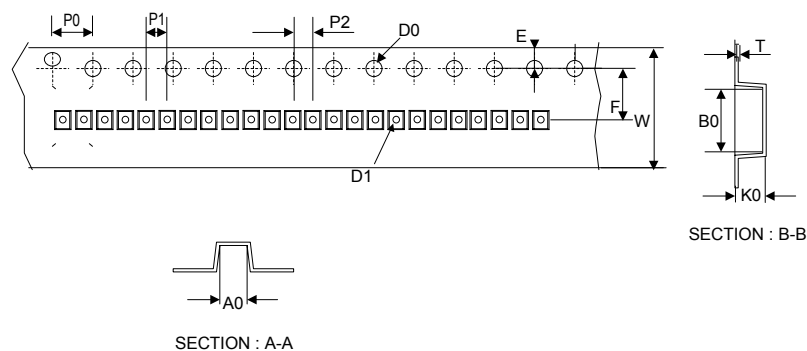
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	



Dimensions	Value (in mm)
C	0.80
G	0.35
X	0.40
X1	1.00
X2	0.40
Y	0.45

Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	2.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	0.65±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	1.65±0.20
B0	1.75±0.20
K0	0.85±0.20
T	0.20±0.20
D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0
Quantity: 8000PCS	

7" Reel

