

FEATURES

Leading Trench Technology for Low $R_{DS(on)}$
Extending Battery Life
Pb-Free, RoHS Compliant

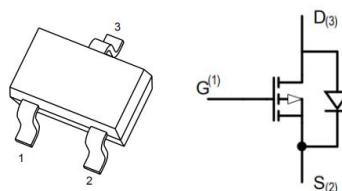
APPLICATIONS

High Side Load Switch
Charging Circuit
Single Cell Battery Applications such as
Cell Phones, Digital Cameras ,PDAs, etc

V_{DS} -20 V
 I_D -1.8 A
 $R_{DS(ON)}$ 150m Ω



Schematic & Pin configuration



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current (note1)	I_D	-1.8	A
Pulsed Drain Current (tp=10-s)	I_{DM}	-3.0	A
Power Dissipation (note1)	P_D	0.29	W
Thermal Resistance from Junction to Ambient (note1)	$R_{\theta JA}$	431	$^{\circ}\text{C/W}$
Junction temperature	T_j	125	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-50 to +150	$^{\circ}\text{C}$

Electrical characteristics (T_a=25°C unless otherwise noted)

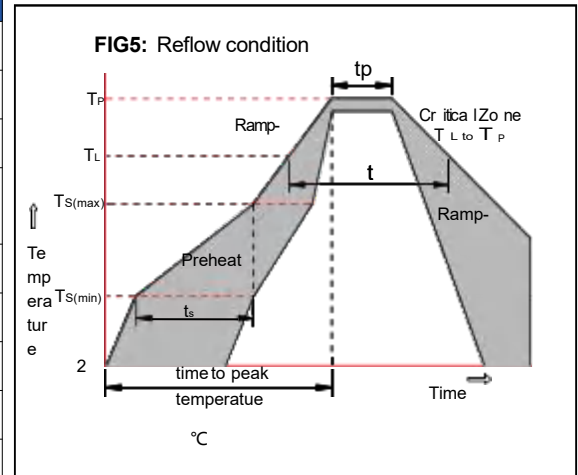
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
STATIC CHARACTERISTIC						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -18V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
Gate threshold voltage (note2)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance (note2)	R _{DS(on)}	V _{GS} = -4.5V, I _D = -2A			150	mΩ
		V _{GS} = -2.5V, I _D = -1.0A			230	mΩ
Maximum Continuous Drain to Source Diode Forward Current	I _S	--			-1.0	A
Diode forward voltage	V _{SD}	I _S = -1.0A, V _{GS} = 0V			-1.2	V

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. These parameters have no way to verify.

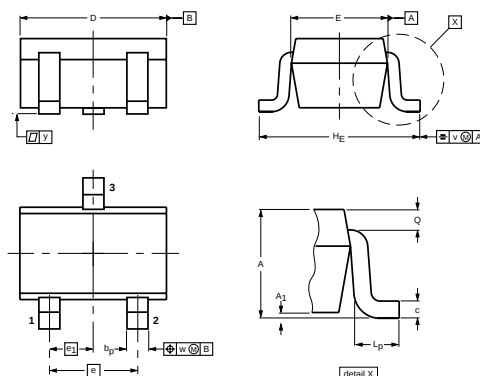
Soldering parameters

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

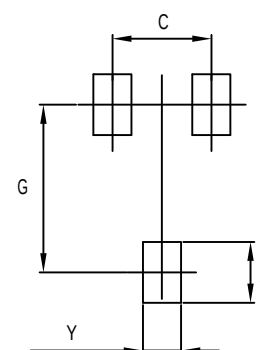
SOT-323



0 1 2 mm
scale

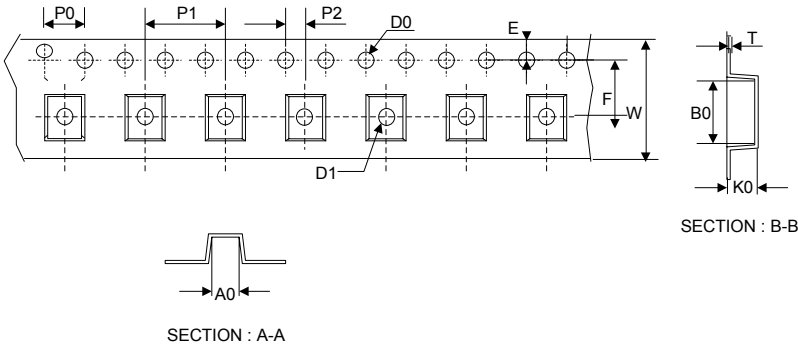
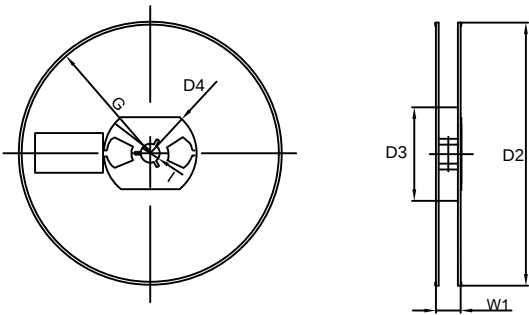
DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2



Dimensions	Value (in mm)
C	1.30
G	2.00
X	0.90
Y	0.65

Tape & reel specification

Tape		Symbol	Dimension (mm)
 SECTION : A-A SECTION : B-B		P0	4.00±0.20
		P1	4.00±0.20
		P2	2.00±0.20
		D0	1.55±0.20
		D1	1.00±0.20
		E	1.55±0.25
		F	3.60±0.20
		W	8.00±0.20
		A0	2.50±0.20
		B0	2.60±0.20
		K0	1.40±0.20
		T	0.20±0.20
		D2	177.0±5.0
		D3	55Min.
		D4	R24.6±2.0
7" Reel		G	R82.0±2.0
		I	13.0±2.0
		W1	10.20±3.0
		Quantity: 3000PCS	