

FEATURES

High density cell design for low $R_{DS(ON)}$
Voltage controlled small signal switch
Rugged and reliable
High saturation current capability

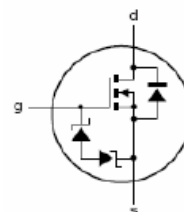
V_{DSS} 50 V
 I_D 0.2 A
 $R_{DS(ON)}$ 3.5 Ω



Equivalent Circuit



SOT23 top view



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings $T_c=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	50	V
V_{GSS}	Gate-Source Voltage	± 20	
I_D	Drain Current-Continuous	0.2	A

Electrical Characteristics $T_J=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0 V, I _{DS} = 250 μA	50	-	-	V
		V _{GS} = 0 V, I _{DS} = 10 μA	50	-	-	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _{DS} = 250 μA	0.5	-	1.5	V
I _{DSS}	Drain Leakage Current	V _{DS} = 50 V, V _{GS} = 0V	-	-	500	nA
		V _{DS} = 25 V, V _{GS} = 0V	-	-	100	μA
I _{GSS}	Gate Leakage Current	V _{GS} = ±20 V, V _{DS} = 0 V	-	-	±100	μA
R _{DS(ON)} ^a	On-State Resistance	V _{GS} = 5 V, I _{DS} = 0.2 A	-	-	3.5	Ω
		V _{GS} = 2.75 V, I _{DS} = 0.2 A	-	-	10	
C _{iss}	Input Capacitance	V _{DS} = 10 V, V _{GS} = 0 V f = 1 MHz	-	21.8	40	pF
C _{oss}	Output Capacitance		-	5.6	15	
C _{rss}	Reverse Transfer Capacitance		-	3.3	10	
Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _{SD} = 0.2 A, V _{GS} = 0 V	-	-	2.5	V

RATING AND CHARACTERISTIC CURVES

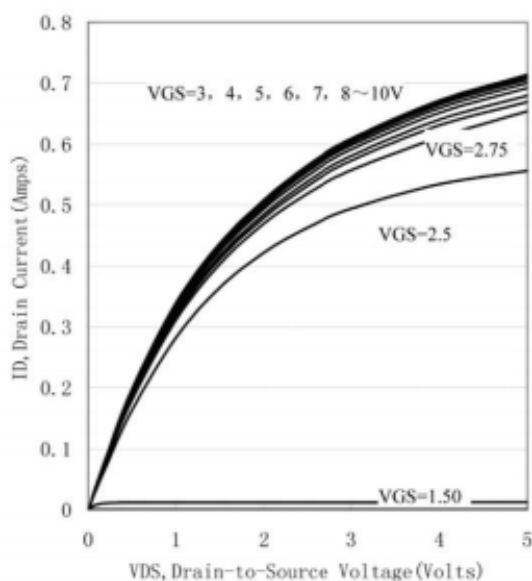


Figure 1. Output Characteristics

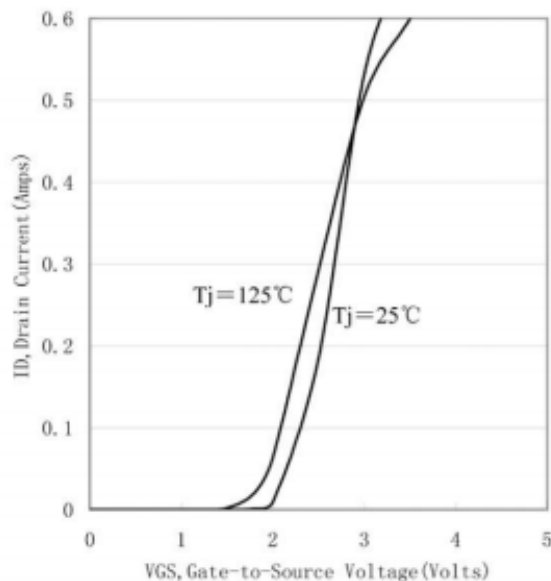


Figure 2. Transfer Characteristics

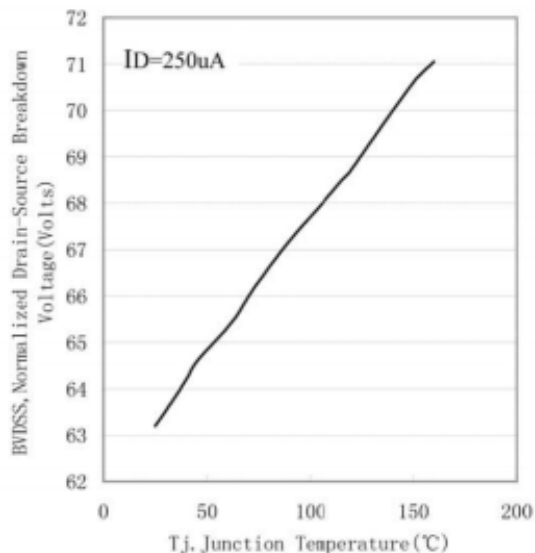


Figure 3. Breakdown Voltage Variation with Temperature

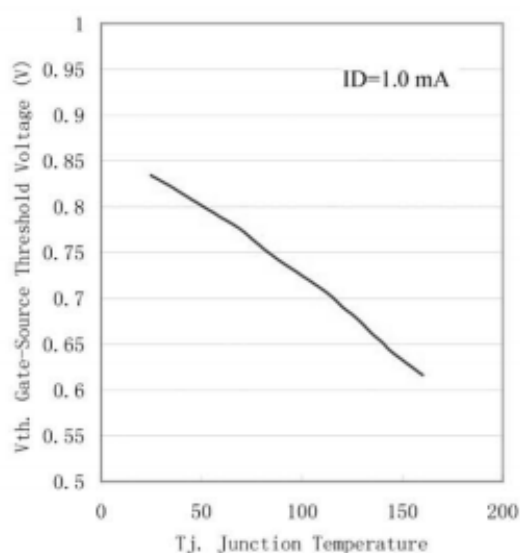
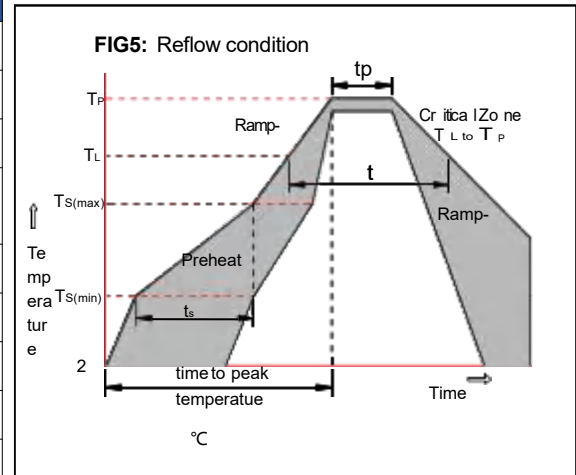


Figure 4. Gate Threshold Variation with Temperature

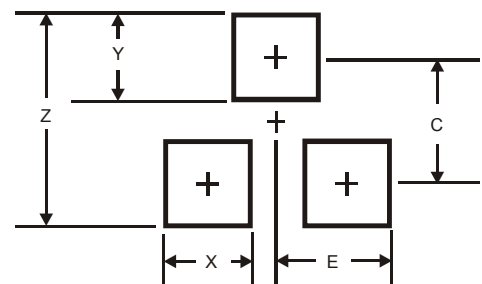
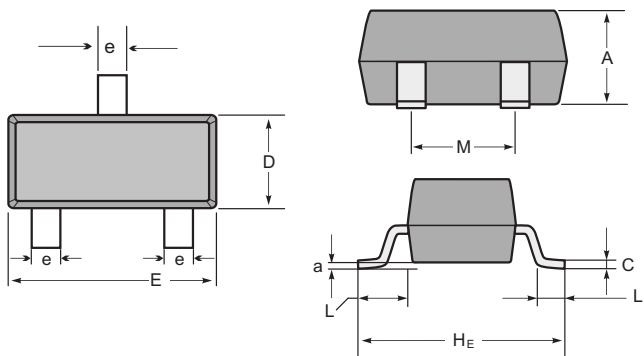
Soldering parameters

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

SOT23

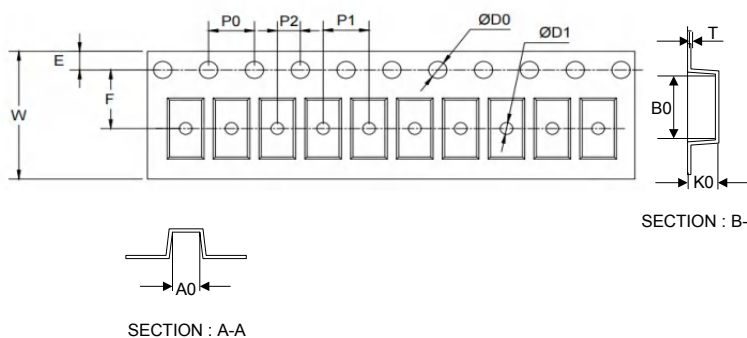
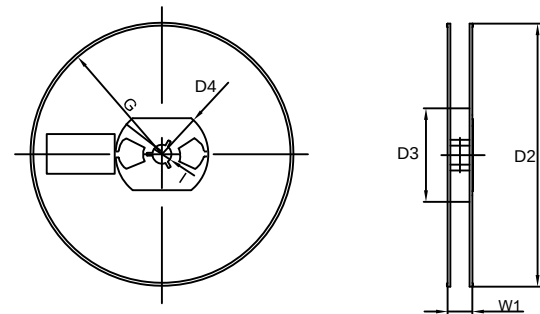


SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape		Symbol	Dimension (mm)
 SECTION : A-A SECTION : B-B		P0	4.00±0.10
		P1	4.00±0.10
		P2	2.00±0.10
		D0	1.55±0.10
		D1	1.05±0.10
		E	1.55±0.10
		F	3.60±0.10
		W	8.00±0.10
		A0	3.80±0.20
		B0	3.25±0.20
		K0	1.45±0.10
		T	0.25±0.05
		D2	178.0±3.0
		D3	55Min.
		D4	R24.0±3.0
7" Reel		G	R82.0±3.0
		I	13.0±2.0
		W1	11.0±3.0
		Quantity: 3000PCS	