

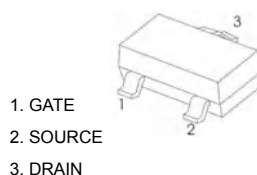
DESCRIPTION

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

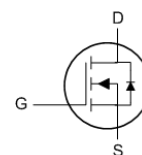
V_{DS} 20 V
 I_D 6.0 A
 $R_{DS(ON)}$ 23 m Ω

ANW

SOT-23



Equivalent Circuit



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}	± 8.0	
Continuous Drain Current $t=5s$	I_D	6	A
Pulsed Drain Current	I_{DM}	20	
Continuous Source-Drain Diode Current	I_S	1.04	
Maximum Power Dissipation $t=5s$	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-50 ~ +150	

$T_a = 25^\circ\text{C}$ unless otherwise specified

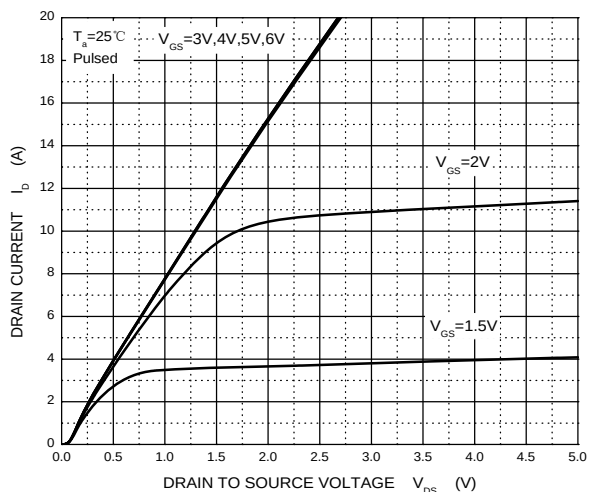
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	20			V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1.0	μA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	0.7	1.0	V
Drain-source on-state resistance ^a	R _{DS (on)}	V _{GS} =4.5V, I _D =5.0A		0.013	0.023	Ω
		V _{GS} =2.5V, I _D =4.7A		0.023	0.028	
		V _{GS} =1.8V, I _D =4.3A		0.030	0.04	
Forward tranconductance ^a	g _{fS}	V _{DS} =10V, I _D =5.0A		6		S
Dynamic ^b						
Input capacitance	C _{iSS}	V _{DS} =10V,V _{GS} =0V,f =1MHz		865		pF
Output capacitance	C _{oSS}			105		
Reverse transfer capacitance	C _{rSS}			55		
Gate resistance	R _g	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	t _{d(on)}	V _{GEN} =5V,V _{DD} =10V, I _D =4A,R _G =1Ω, R _L =2.2Ω			10	ns
Rise time	t _r				20	
Turn-off Delay time	t _{d(off)}				32	
Fall yime	t _f				12	
Drain-source body diode characteristics						
Forward diode voltage	V _{SD}	V _{GS} =0V,I _S =4A		0.75	1.2	V

Notes :

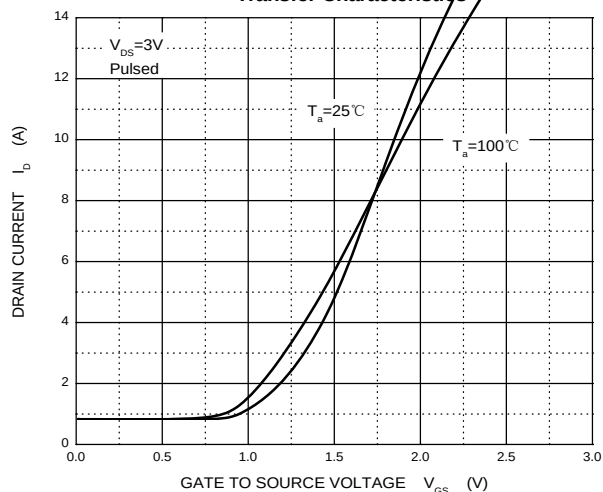
- Pulse Test : pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- These parameters have no way to verify.

RATING AND CHARACTERISTIC CURVES

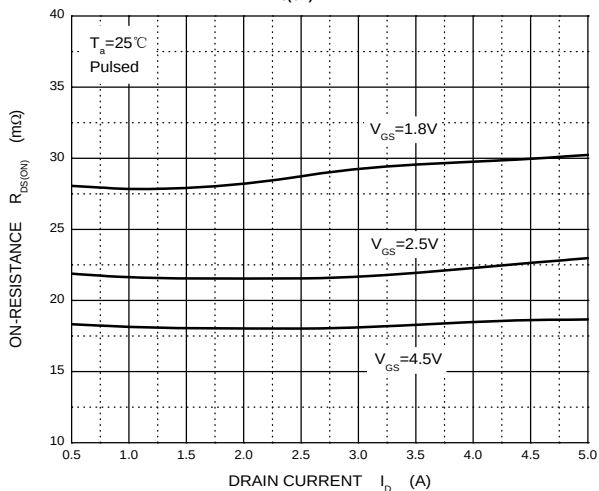
Output Characteristics



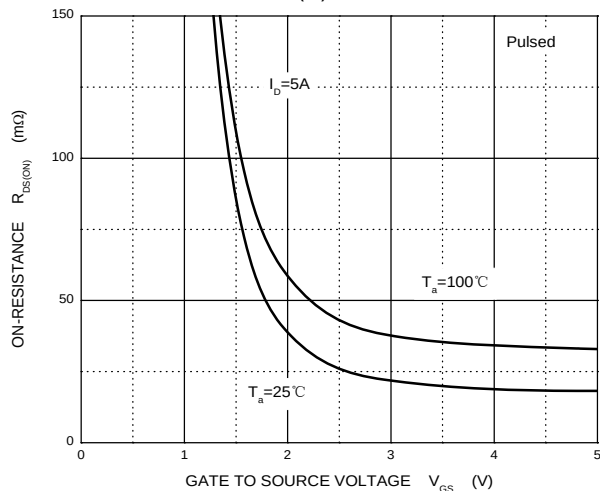
Transfer Characteristics



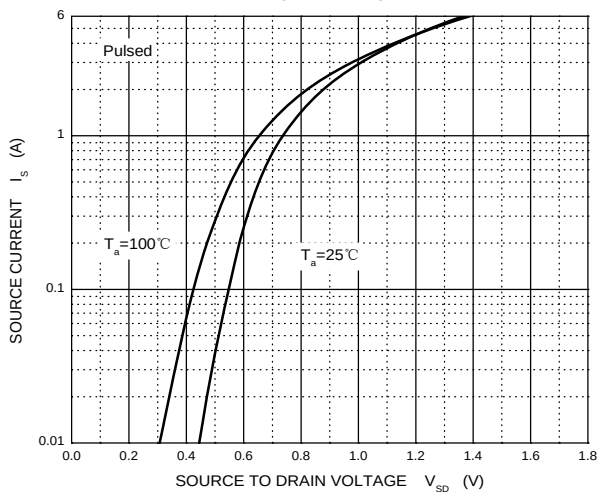
$R_{DS(ON)}$ — I_D



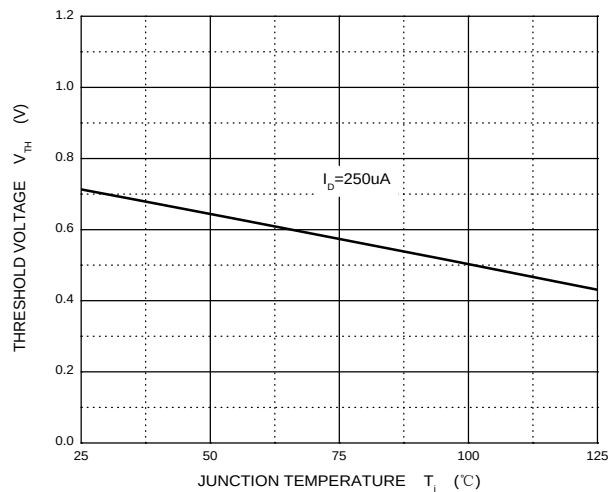
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

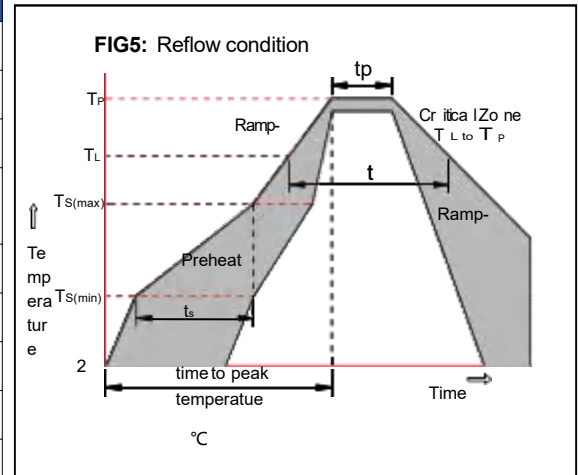


Threshold Voltage



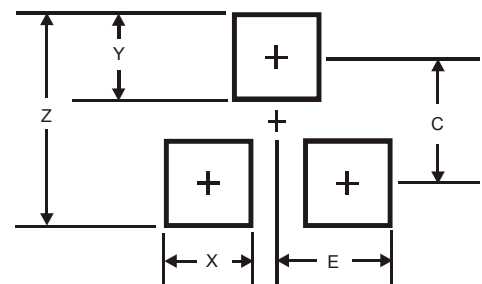
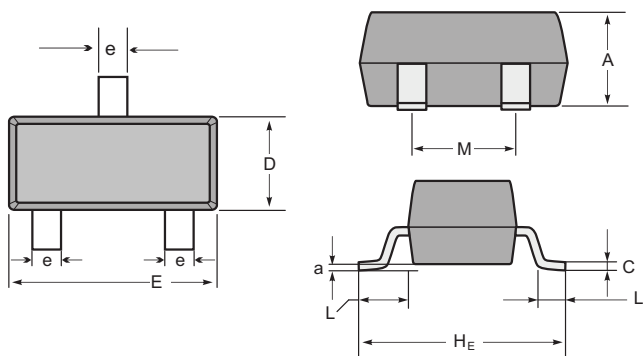
Soldering parameters

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

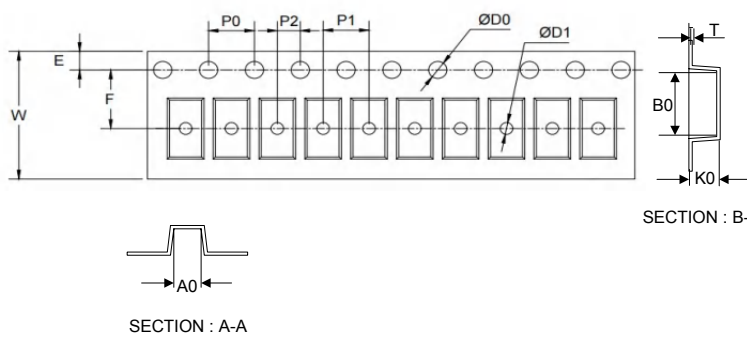
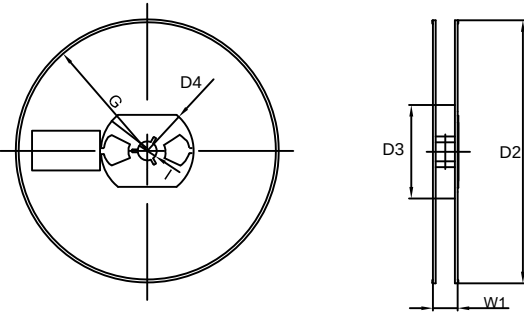


SOT-23 mechanical data

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)
		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	