

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	14mΩ@10V	7A
	16mΩ@4.5V	
	17mΩ@3.8V	
	20mΩ@2.5V	
	48mΩ@1.8V	

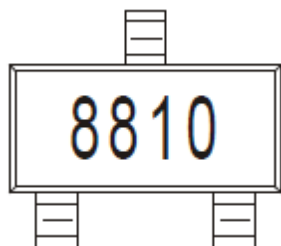
Feature

- Surface Mount Package
- LOW $R_{DS(on)}$
- ESD Protected Gate

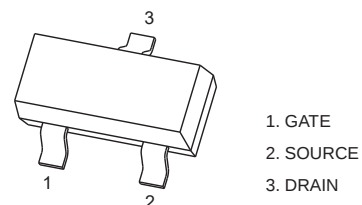
Application

- Load/Power Switching
- Small Portable Electronics

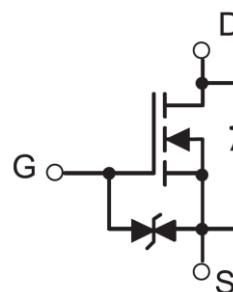
MARKING:



SOT-23



Schematic diagram



ABSOLUTE 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	
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	30	
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	

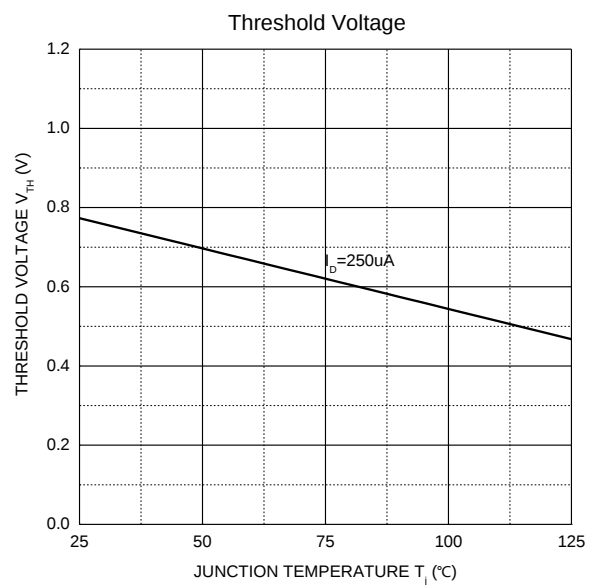
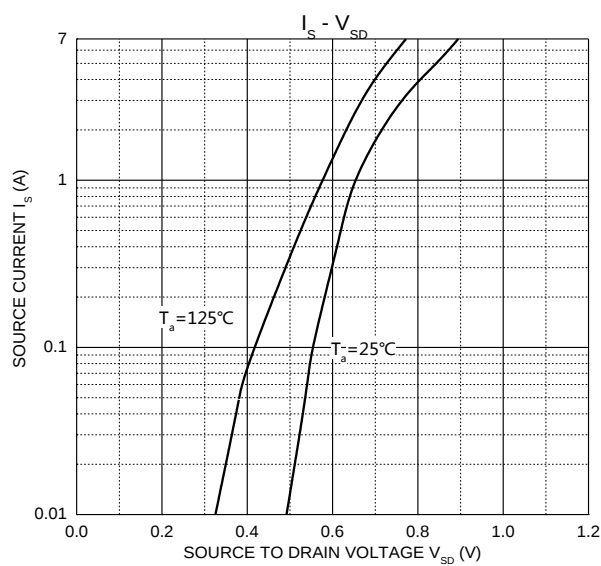
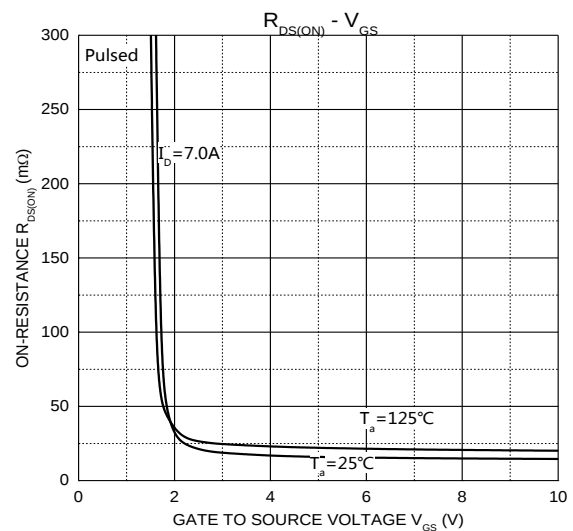
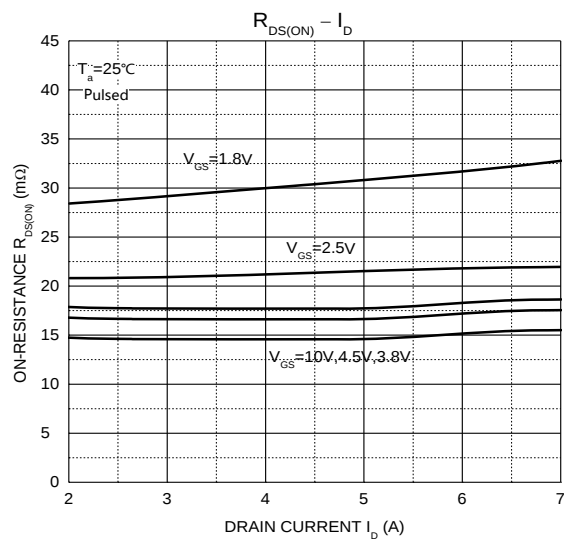
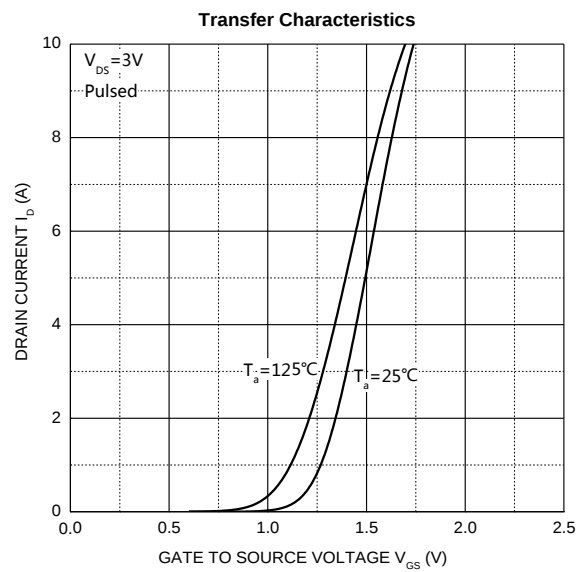
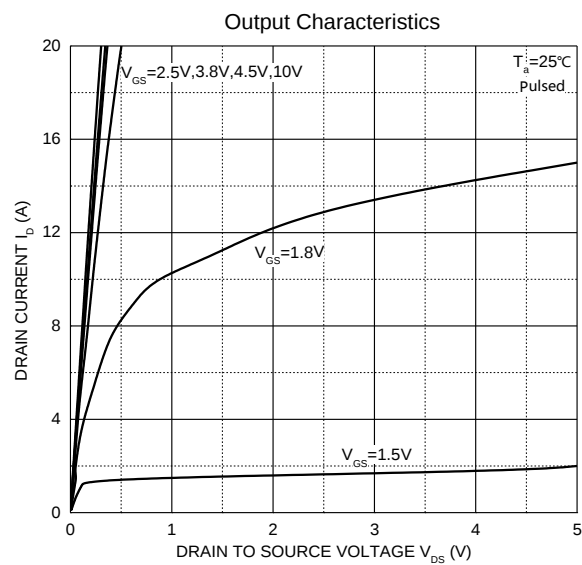
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

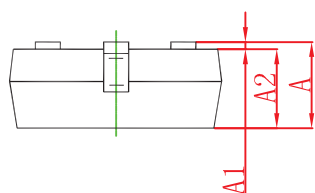
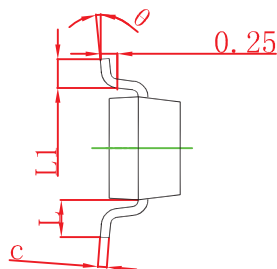
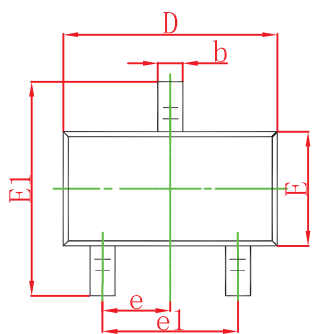
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =16V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±4.5V, V _{DS} = 0V			±1	μA
		V _{GS} =±8.0V, V _{DS} = 0V			±10	μA
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.0	V
Drain-source on-resistance ⁽¹⁾	R _{DS(on)}	V _{GS} =10V, I _D =7.0A		14	26	mΩ
		V _{GS} =4.5V, I _D =6.6A		16	27	
		V _{GS} =3.8V, I _D =6.0A		17	26	
		V _{GS} =2.5V, I _D =5.5A		20	33	
		V _{GS} =1.8V, I _D =3.0A		48	70	
Forward tranconductance ⁽¹⁾	g _{FS}	V _{DS} =5.0V, I _D =7.0A	9	13.6		S
Dynamic characteristics ⁽²⁾						
Total gate charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =7.0A		15		nC
Gate-source charge	Q _{gs}			0.8		
Gate-drain charge	Q _{gd}			3.2		
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f =1MHz		740		pF
Output Capacitance	C _{oss}			141		
Reverse Transfer Capacitance	C _{rss}			136		
Gate resistance	R _g	V _{DS} =0V,V _{GS} =0V, f =1MHz		2		Ω
SWITCHING PARAMETERS ⁽²⁾						
Turn-on delay time	t _{d(on)}	V _{GS} =5V,VDD=10V, R _L =1.35Ω,R _{GEN} =3Ω		6		ns
Turn-on rise time	t _r			13		
Turn-off delay time	t _{d(off)}			52		
Turn-off fall time	t _f			16		
Source-Drain Diode characteristics ⁽¹⁾						
Body diode voltage	V _{SD}	I _S =1A,V _{GS} =0V		0.77	1.2	V

Notes:

1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
2. Guaranteed by design, not subject to production testing.

Typical Characteristics



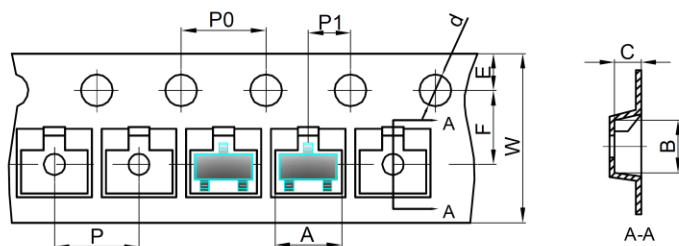
SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Tape and Reel

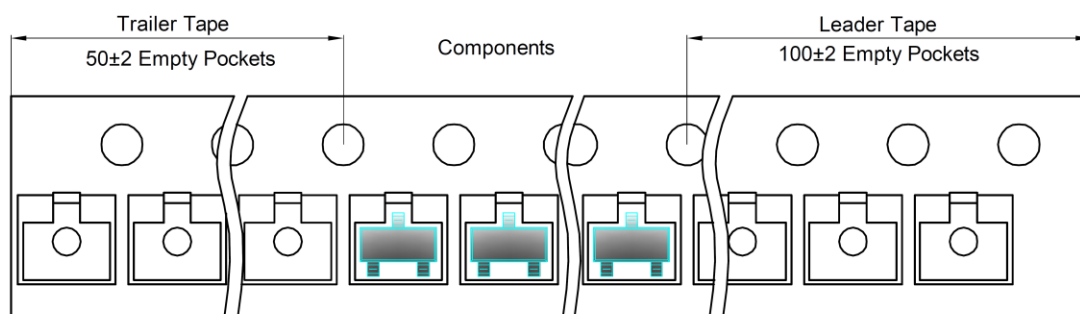
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

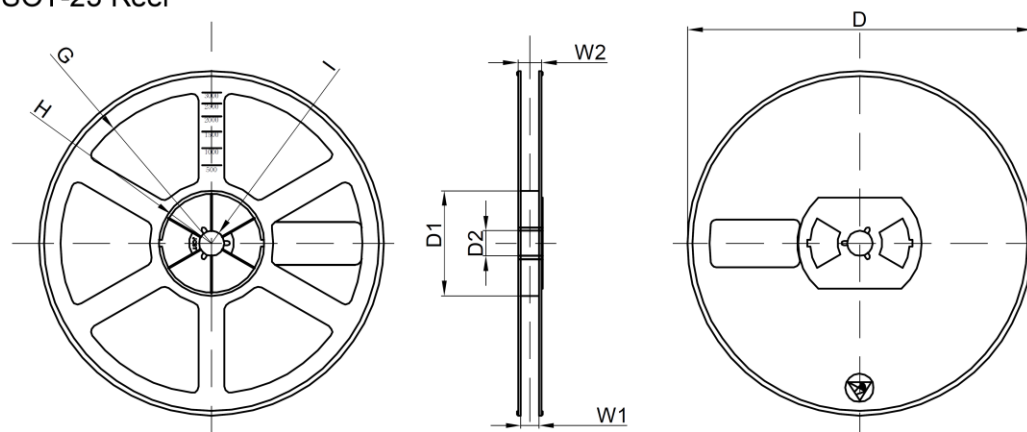


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	