

SOT-23 Plastic-Encapsulate MOSFETS

MOSFET(P-Channel)

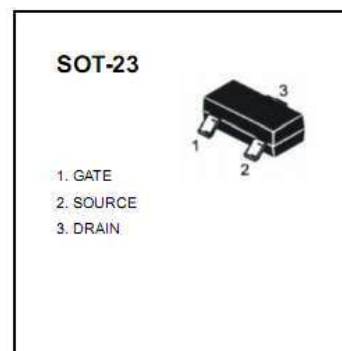
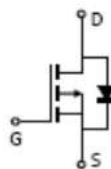
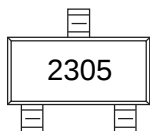
Features

High Power and current handing capability

Lead free product is acquired

Surface Mount Packing

MARKING: 2305



MAXIMUM RATINGS (TA=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source voltage	-20	V
V _{GS}	Gate-Source voltage	±12	V
I _D	Drain current (V _{GS} = -4.5V Tc=25°C)	-4.1	A
	Drain current (V _{GS} = -4.5V Tc=70°C)	-2.8	A
I _{DM}	Pulsed Drain Current	- 24	A
P _D	Power Dissipation	1.7	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (Tc=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250uA	-20			V
Gate-Threshold Voltage	V _{th(GS)}	V _{DS} = V _{GS} , I _D =-250 uA	-0.45	-0.7	-1	V
Gate-body 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	uA
Drain-Source On-Resistance	r _{DS(ON)}	V _{GS} =-4. 5V, I _D =-4.1A		39	52	m Ω
		V _{GS} =-2. 5V, I _D =-3A		58	75	m Ω
		V _{GS} = - 1.8 V, I _D = - 2 A		87	108	m Ω
Forward Trans conductance	g _{fs}	V _{DS} =-5V, I _D =-3.5A		8.5		s
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-4V, V _{GS} =0V, f=1MHz		740		pF
Output Capacitance	C _{oss}			290		
Reverse Transfer Capacitance	C _{rss}			190		
Switching Capacitance						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-4V, I _D =-3. 3A, V _{GS} =-4. 5V R _{GEN} =1 Ω		12		nS
Turn-on Rise Time	t _r			35		nS
Turn-off Delay Time	t _{d(off)}			30		nS
Turn-off Fall Time	t _f			10		nS
Total Gate Charge	Q _g	V _{DS} =-4V, I _D =-4. 1A, V _{GS} =-4. 5V,		7.8		nC
Gate-Source Charge	Q _{gs}			1.2		nC
Gate-Drain Charge	Q _{gd}			1.6		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _D =-1. 3A			-1.2	V
Diode Forward Current	I _S				-1.3	A

Typical Characteristics

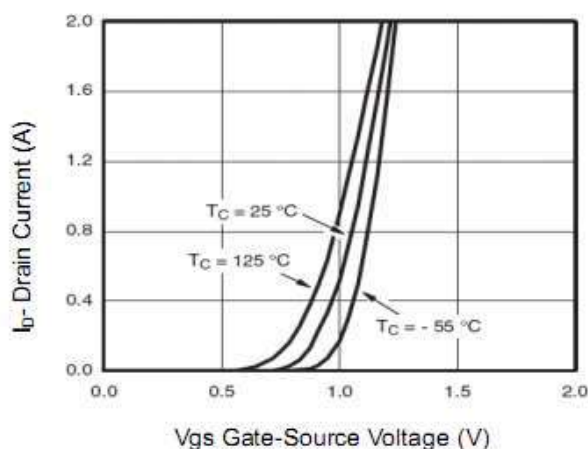


Figure 7 Transfer Characteristics

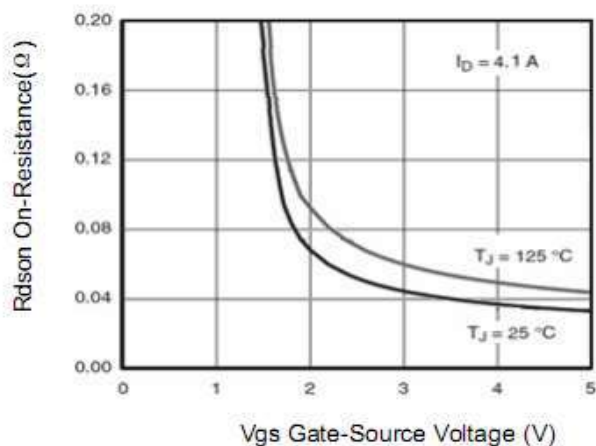


Figure 9 $R_{DS(on)}$ vs V_{GS}

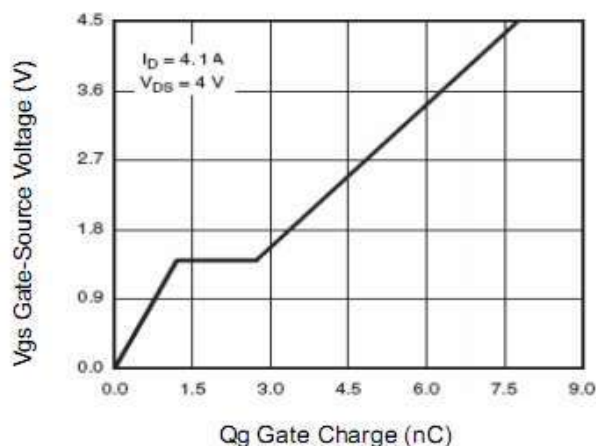


Figure 11 Gate Charge

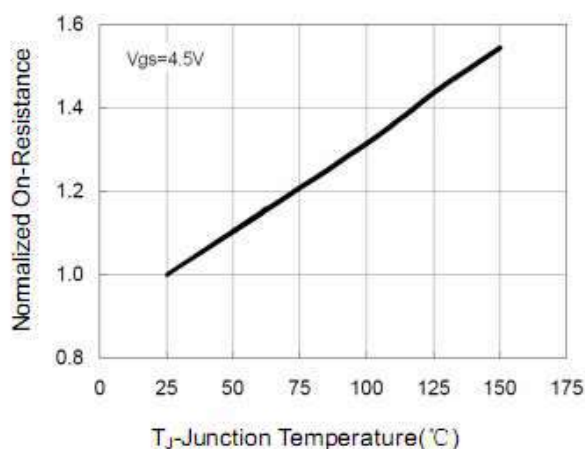


Figure 8 Drain-Source On-Resistance

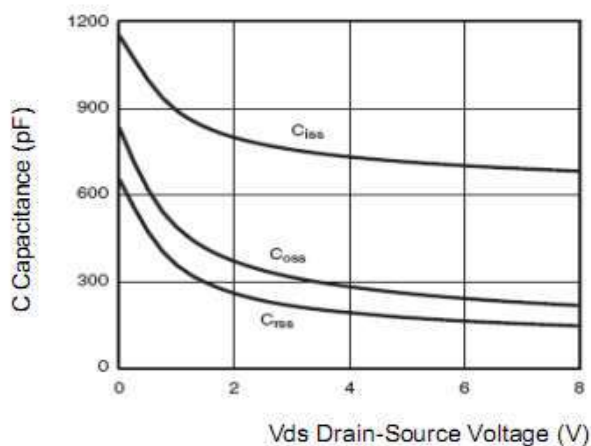


Figure 10 Capacitance vs V_{DS}

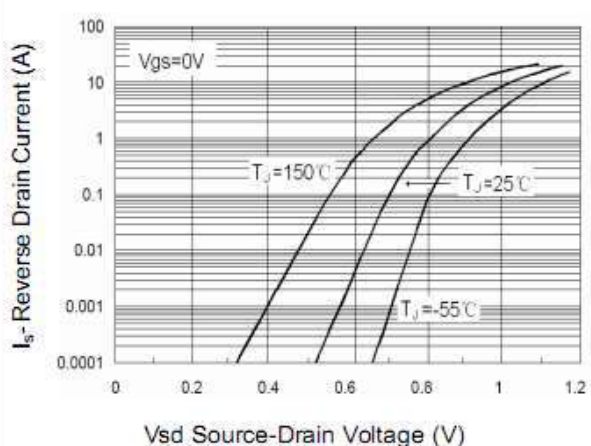
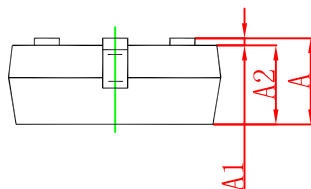
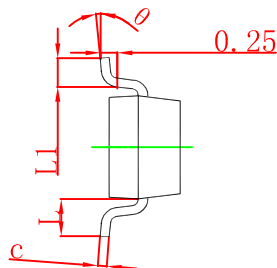
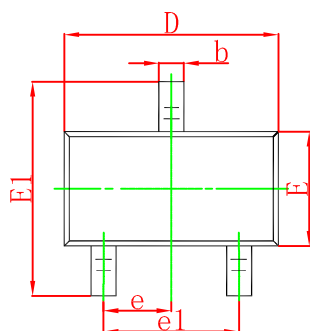


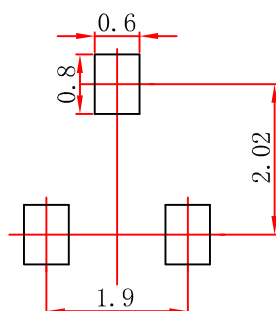
Figure 12 Source-Drain Diode Forward

SOT-23 Package Outline Dimensions



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°

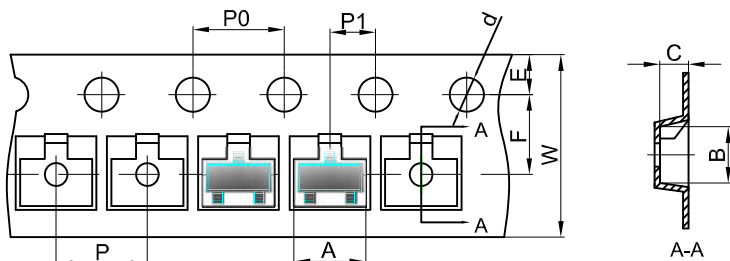
SOT-23 Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

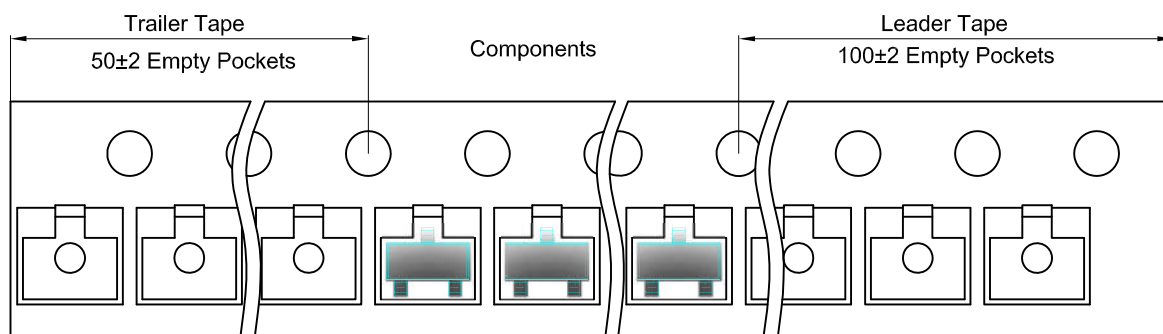


Packaging Description:

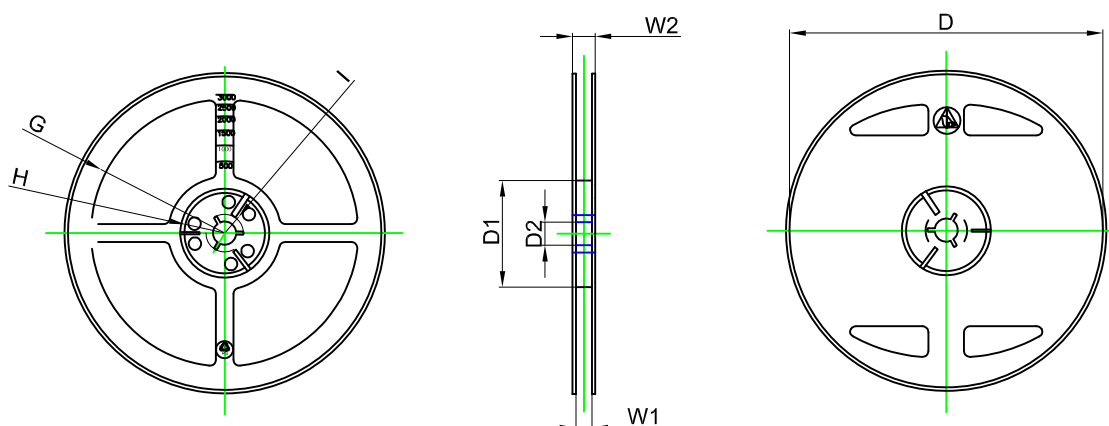
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

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(S)



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	R9.35	9.50	12.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	