



HY2305

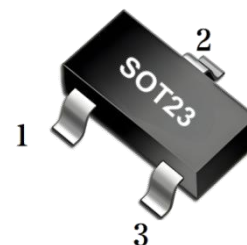
P-CHANNEL MOSFET

-4.1A, -12V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

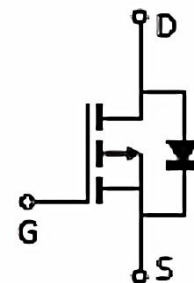
■ DESCRIPTION

The HY2305 is P-channel enhancement mode power MOSFET, designed in serried ranks. With fast switching speed, low on-resistance, favorable stabilization. Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

The HY2305 meet the ROHS and Green Product requirement with full function reliability approved.



Equivalent Circuit



■ FEATURE

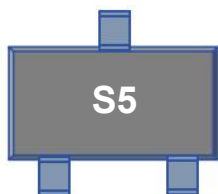
*TrenchFET Power MOSFET

■ APPLICATION

- * Load Switch for Portable Devices
- * DC/DC Converter

■ MARKING

Type Code: Marking: S5



■ ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

SYMBOL	PARAMETER	VALUE	UNIT
V _{DS}	Drain-Source Voltage	-12	V
V _{GS}	Gate Source Voltage	±8	V
I _D	Continuous Drain Current	-4.1	A
I _S	Continuous Source-Drain Diode Current	-0.8	A
P _D	Maximum Power Dissipation	0.35	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55~150	°C
R _{θJA}	Thermal Resistance from Junction to Ambient (t ≤ 10s)	357	°C/W

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.



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■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-12			V
Gate-Source Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =-250μA	-0.5		-0.9	V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-8V, V _{GS} =0V			-1	μA
Drain-source on-state resistance(Note1)	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-3.5A		30	45	mΩ
		V _{GS} =-2.5V, I _D =-3A		40	60	
		V _{GS} =-1.8V, I _D =-2.0A		60	90	
Forward transconductance(Note1)	g _{fs}	V _{DS} =-5V, I _D =-4.1A	6			S
DYNAMIC						
Input Capacitance(Note 2.3)	C _{ISS}	V _{GS} =0V, V _{DS} = -4V, f=1MHz		740		pF
Output Capacitance(Note 2.3)	C _{OSS}			290		
Reverse Transfer Capacitance(Note 2.3)	C _{RSS}			190		
Total gate charge(Note 2)	Q _g	V _{DS} =-4V, V _{GS} =-4.5V, I _D =-4.1A		7.8	15	nC
		V _{DS} =-4V, V _{GS} =-2.5V, I _D =-4.1A		4.5	9	
Gate-source charge(Note 2)	Q _{gs}			1.2		
Gate-drain charge(Note 2)	Q _{gd}			1.6		
Gate Resistance(Note 2.3)	R _g	f =1MHz	1.4	7	14	Ω
Turn-On Delay Time(Note 2.3)	td(on)	V _{DD} =-4V, R _L =1.2Ω, I _D ≈3.3A, V _{GEN} =-4.5V, R _g =1Ω		13	20	ns
Rise Time(Note 2.3)	tr			35	53	
Turn-Off Delay Time(Note 2.3)	td(off)			32	48	
Fall Time(Note 2.3)	tf			10	20	
Turn-On Delay Time(Note 2.3)	td(on)	V _{DD} =-4V, R _L =1.2Ω, I _D ≈-3.3A, V _{GEN} =-8V R _g =1Ω		5	10	
Rise Time(Note 2.3)	tr			11	17	
Turn-Off Delay Time(Note 2.3)	td(off)			22	33	
Fall Time(Note 2.3)	tf			16	24	
DRAIN-SOURCE BODY DIODE CHARACTERISTICS						
Continuous Source-Drain Diode Current	I _s	T _c =25℃			-1.4	A
Pulse Diode Forward Current(Note1)	I _{SM}				-10	A
Body Diode Voltage	V _{SD}	I _s =-3.3A			-1.2	V

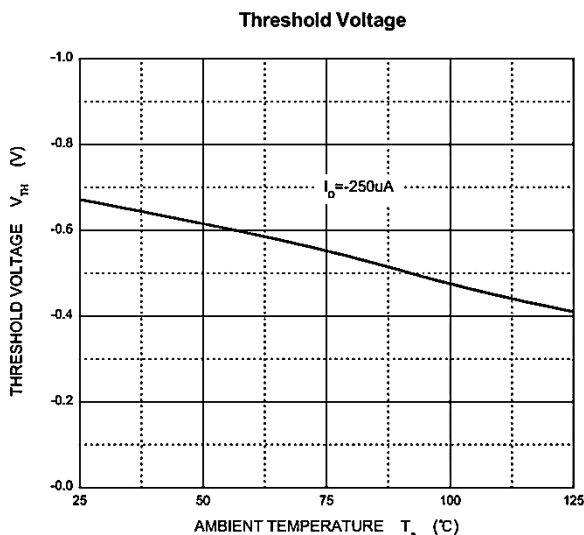
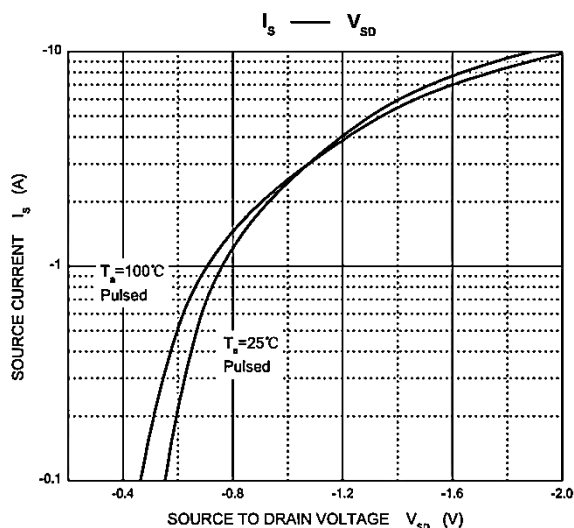
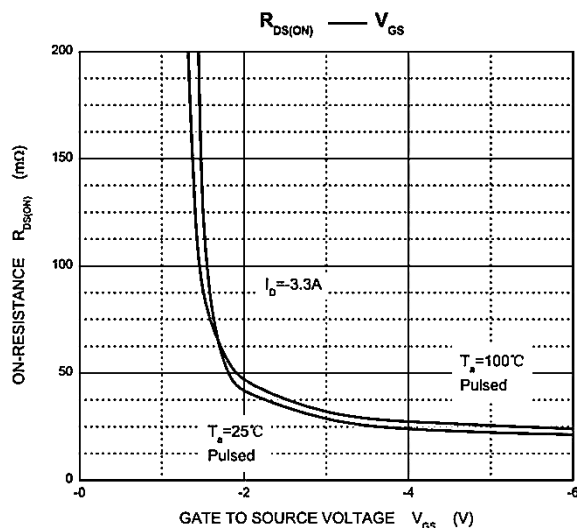
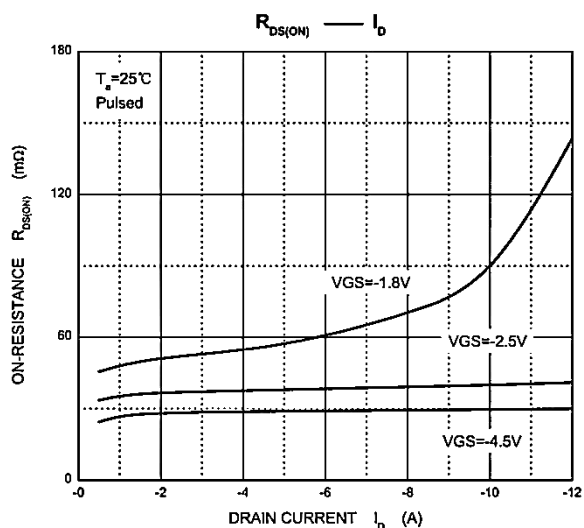
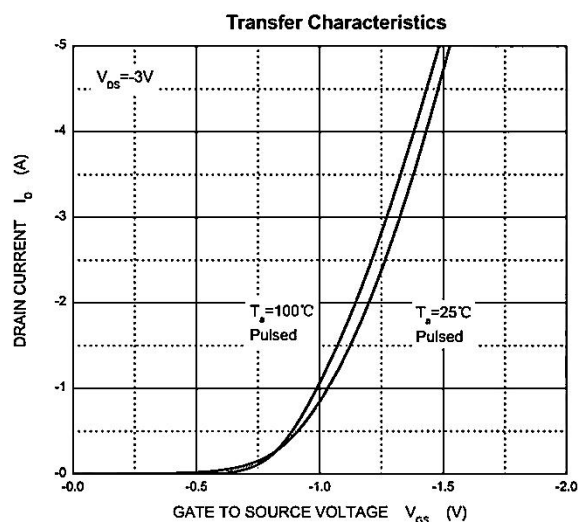
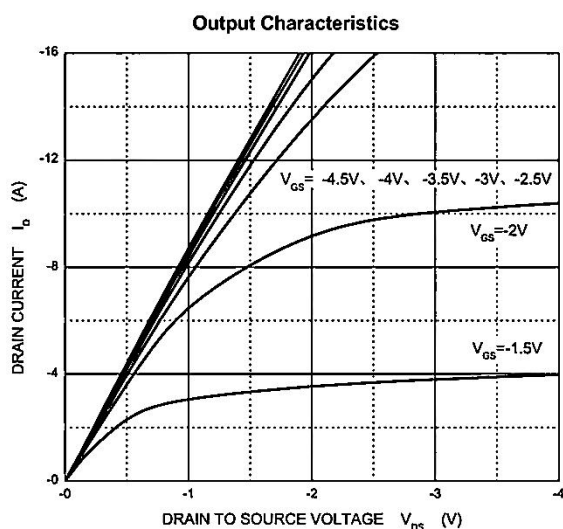
Notes: 1. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
2.Guaranteed by design, not subject to production testing.
3.These parameters have no way to verify.



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TYPICAL CHARACTERISTICS

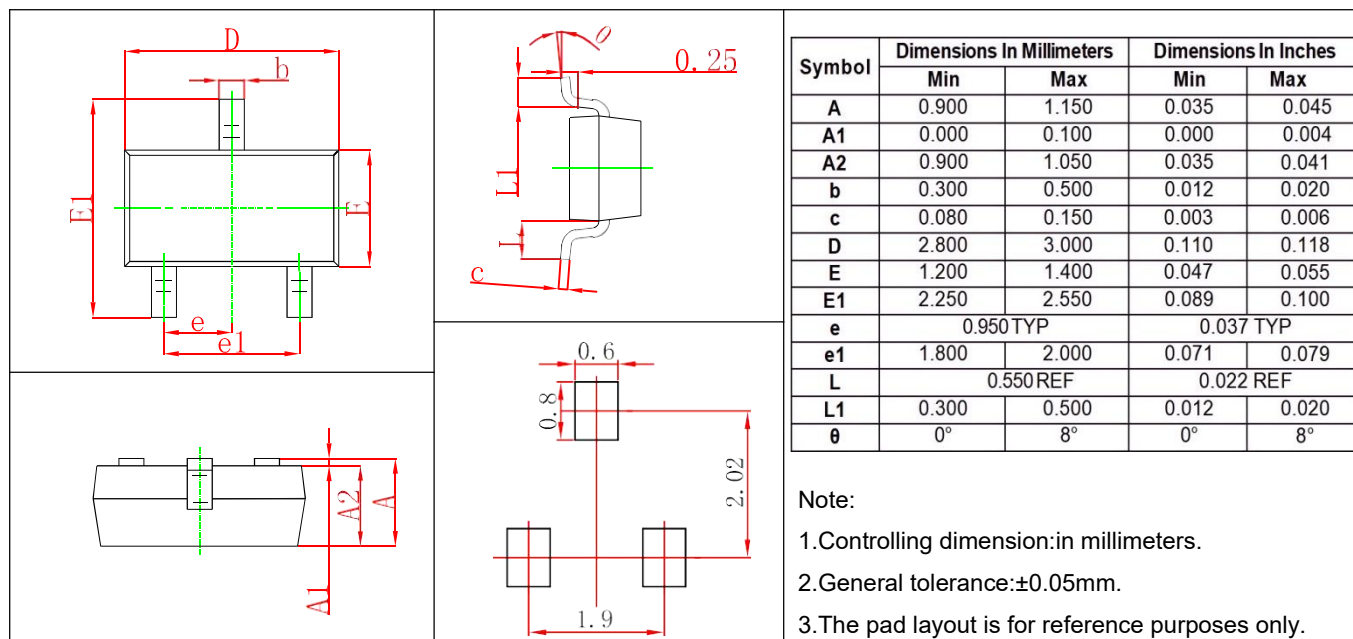




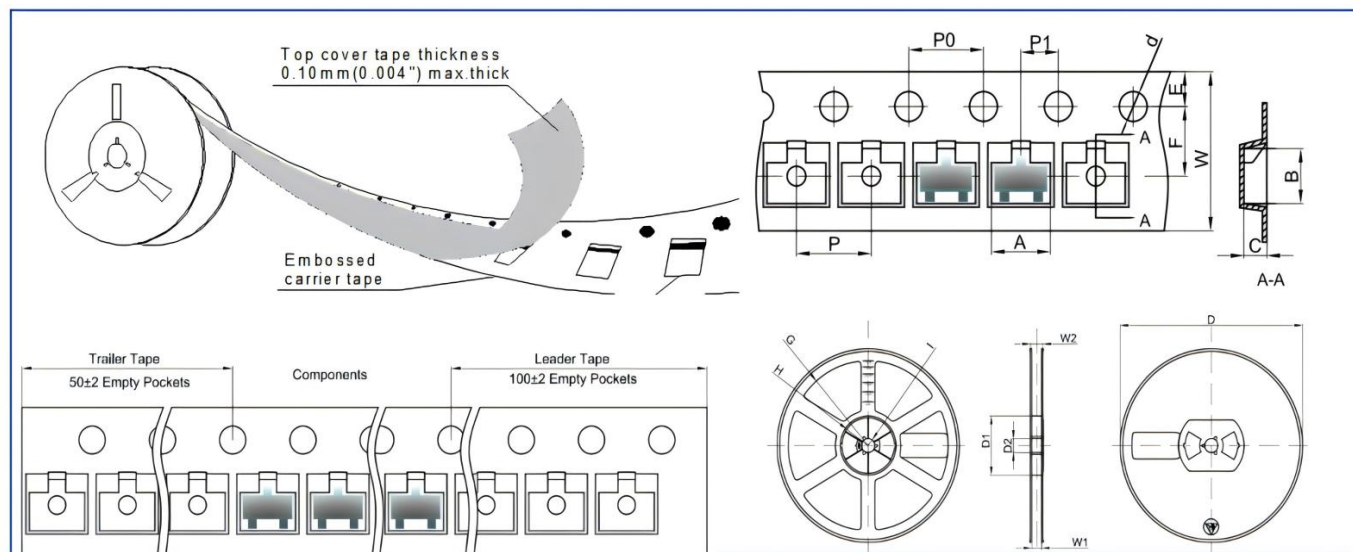
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SOT23 PACKAGE OUTLINE DIMENSIONS



REEL PACKING



Dimensions are in millimeter

PKG TYPE	A	B	C	d	E	F	Po	P	P1	W
SOT-23	3.15	2.77	1.22	Φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
Reel Option	D	D1	D2	G	H	I	W1	W2	Q.TY PER REEL	
7" Dia	Φ178.0	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30	3000PCS	
13" Dia	Φ330.0	/	13.00	/	/	R6.50	9.50	12.30	10000PCS	