



HY2303

P-CHANNEL MOSFET

-1.9A, -30V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The HY2303 meet the ROHS and Green Product requirement with full function reliability approved.

FEATURE

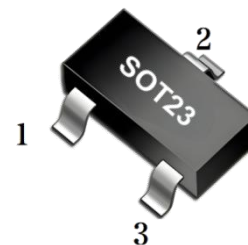
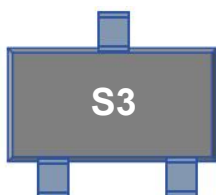
*TrenchFET Power MOSFET

APPLICATION

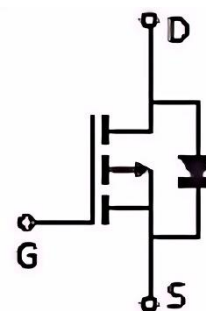
- * Load Switch for Portable Devices
- * DC/DC Converter

MARKING

Type Code: Marking: S3



Equivalent Circuit



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

SYMBOL	PARAMETER	VALUE	UNIT
V _{DS}	Drain-Source Voltage	-30	V
V _{GS}	Gate Source Voltage	±20	V
I _D	Continuous Drain Current (T _J =150°C)	-1.9	A
I _S	Continuous Source-Drain Diode Current	-0.83	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	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	-30			V	
Gate-Source Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =-250μA	-1	-1.6	-3	V	
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	μA	
Drain-source on-state resistance(Note1)	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-1.4A		115	330	mΩ	
		V _{GS} =-10V, I _D =-1.9A		75	190		
Forward transconductance(Note1)	g _{fs}	V _{DS} =-5V, I _D =-1.9A	1			S	
DYNAMIC(Note 2)							
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} = -15V, f=1MHz		155		pF	
Output Capacitance	C _{OSS}				35		pF
Reverse Transfer Capacitance	C _{RSS}				25		pF
Total gate charge	Q _g	V _{DS} =-15V, V _{GS} =-10V, I _D =-1.9A		4	8	nC	
		V _{DS} =-15V, V _{GS} =-4.5V, I _D =-1.9A		2	4		
Gate-source charge	Q _{gs}			0.6			
Gate-drain charge	Q _{gd}			1			
Gate Resistance	R _g	f =1MHz	1.7	8.5	17	Ω	
Turn-On Delay Time	td(on)	V _{DD} =-15V, R _L =10Ω, I _D =-1.5A, V _{GEN} =-10V, R _g =1Ω		4	8	ns	
Rise Time	tr			11	18		
Turn-Off Delay Time	td(off)			11	18		
Fall Time	tf			8	16		
Turn-On Delay Time	td(on)	V _{DD} =-15V, R _L =10Ω, I _D =-1.5A, V _{GEN} =-4.5V R _g =1Ω		36	44		
Rise Time	tr			37	45		
Turn-Off Delay Time	td(off)			12	18		
Fall Time	tf			9	14		
DRAIN-SOURCE BODY DIODE CHARACTERISTICS							
Continuous Source-Drain Diode Current	I _s	T _c =25℃			-1.75	A	
Pulse Diode Forward Current(Note1)	I _{SM}				-10	A	
Body Diode Voltage	V _{SD}	I _s =-1.5A		-0.8	-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.

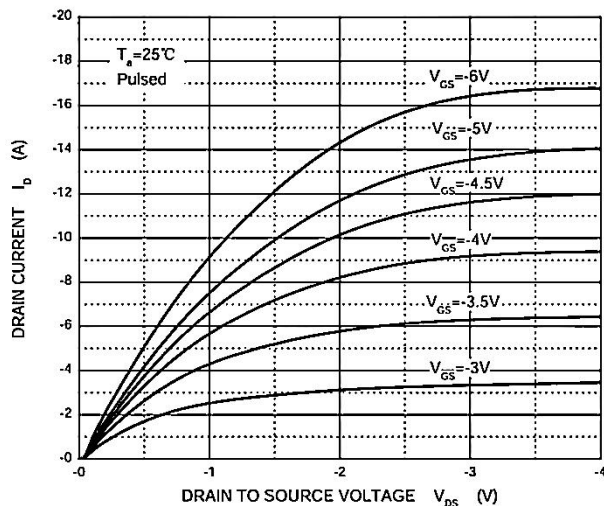


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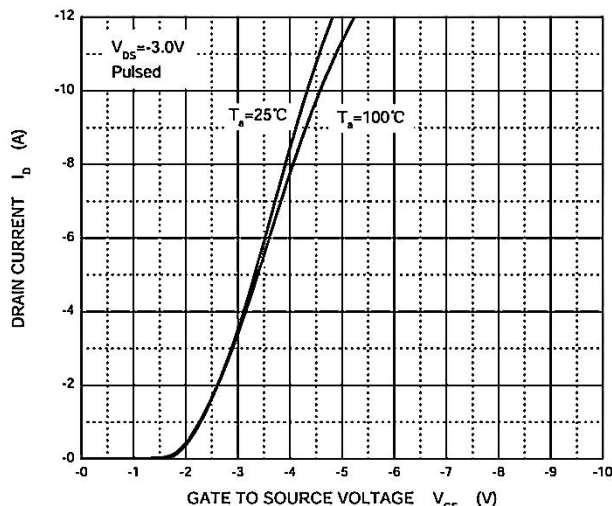
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TYPICAL CHARACTERISTICS

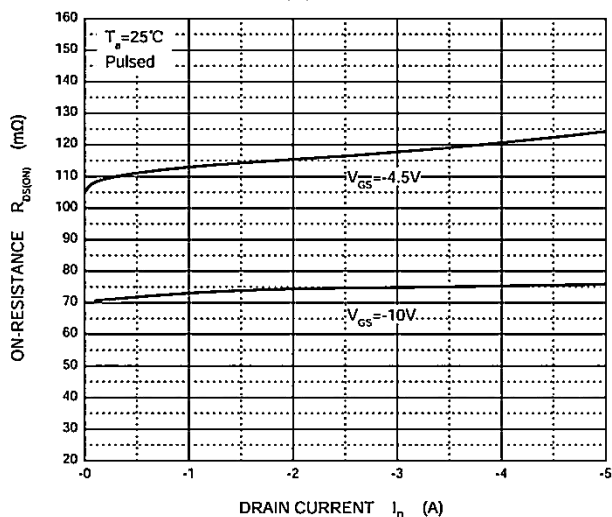
Output Characteristics



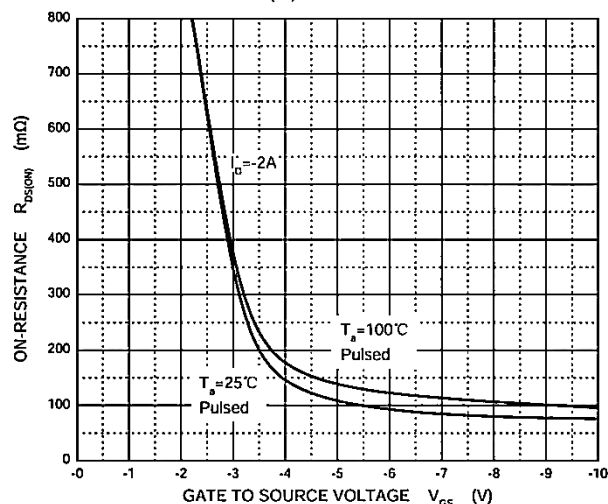
Transfer Characteristics



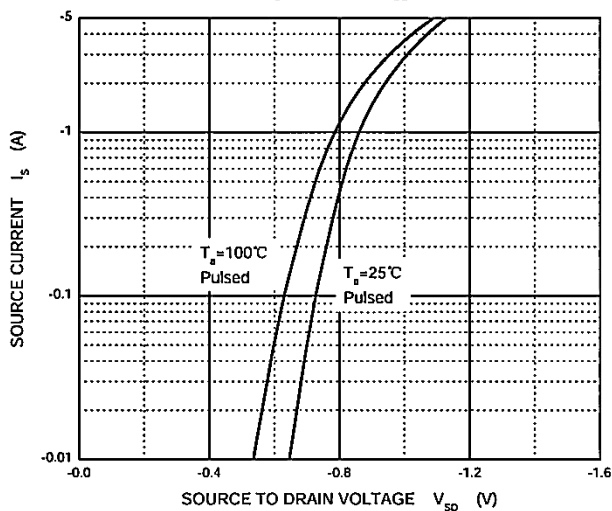
$R_{DS(ON)}$ — I_D



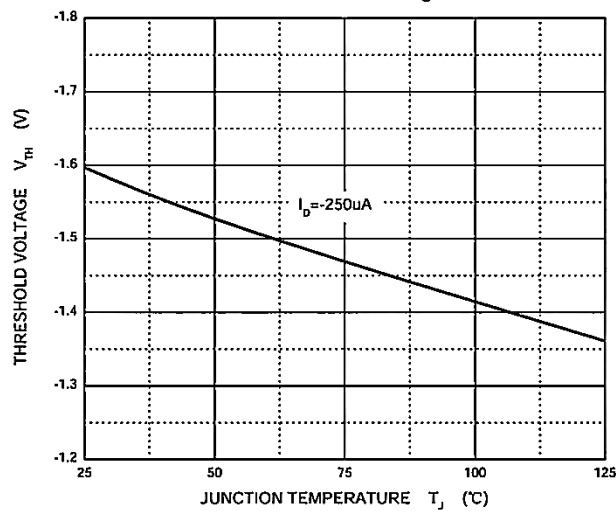
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

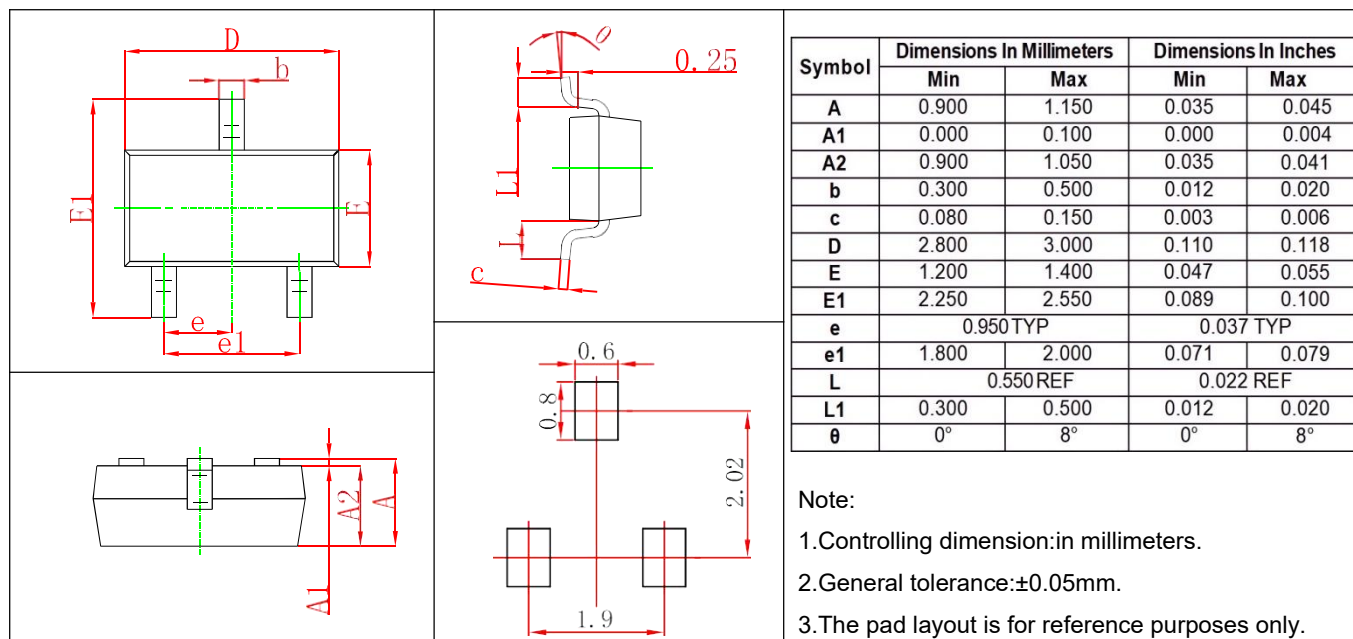




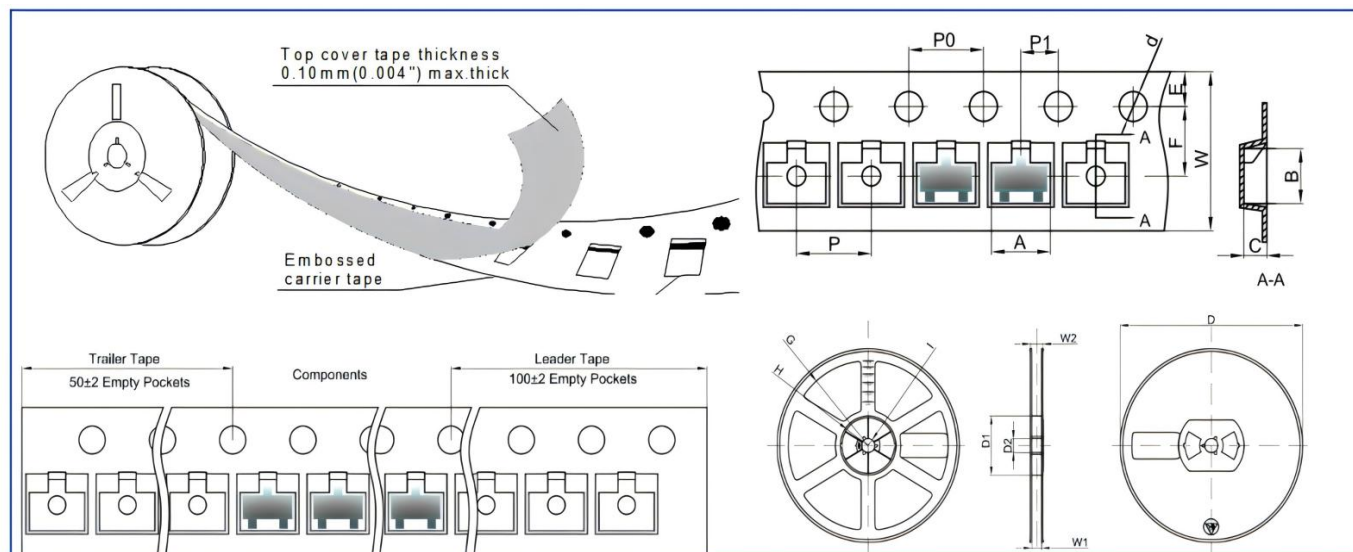
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SOT23 PACKAGE OUTLINE DIMENSIONS



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	