



HY2333

P-CHANNEL MOSFET

-6A, -12V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

■ DESCRIPTION

The HY2333 meet the ROHS and Green Product requirement with full function reliability approved.

■ FEATURE

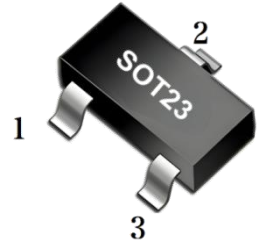
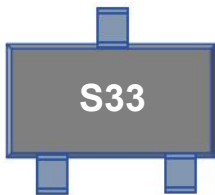
- *TrenchFET Power MOSFET
- *Excellent RDS(on) and Low Gate Charge

■ APPLICATION

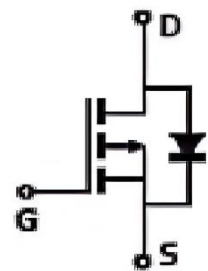
- * DC/DC Converter
- * Load Switch for Portable Devices
- * Battery Switch

■ MARKING

Type Code: Marking: S33



Equivalent Circuit



■ 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	-6(note 1)	A
I _{DM}	Pulsed Drain Current(t=300μs)	-20	A
P _D	Power Dissipation	1.1(Note 1)	W
		0.35(Note 2)	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55~150	°C
R _{θJA}	Thermal Resistance From Junction To Ambient	357(Note 2)	°C/W
		113(Note 1)	°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.

1.Device mounted on FR-4 substrate board, with minimum recommended pad layout, single side.

2.Device mounted on no heat sink.



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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-12			V
Gate Threshold Voltage(Note 1)	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =-250μA	-0.4		-1	V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±0.1	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-12V, V _{GS} =0V			-1	μA
Drain-source on-state resistance(Note 1)	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-5A		22	28	mΩ
		V _{GS} =-3.7V, I _D =-4.6A		24	32	
		V _{GS} =-2.5V, I _D =-4.3A		27	40	
		V _{GS} =-1.8V, I _D =-1A		34	63	
		V _{GS} =-1.5V, I _D =-0.5A		42	150	
Forward Transconductance(Note 1)	g _{fs}	V _{DS} =-5V, I _D =-5A		18		S
DYNAMIC CHARACTERISTICS(Note 2)						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-6V, f=1MHz		1275		pF
Output Capacitance	C _{OSS}			255		
Reverse Transfer Capacitance	C _{RSS}			236		
Gate Resistance	R _g	F=1MHz	1.9		19	Ω
Total gate charge	Q _g	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-5A		14	21	nC
Gate-source charge	Q _{gs}			2.3		
Gate-drain charge	Q _{gd}			3.6		
Turn-On Delay Time	t _{d(on)}	V _{GEN} =-4.5V, I _D =-4A, V _{DD} =-6V, R _L =6Ω, R _{GEN} =1Ω		26	40	ns
Rise Time	t _r			24	40	
Turn-Off Delay Time	t _{d(off)}			45	70	
Fall Time	t _f			20	35	
SOURCE-DRAIN DIODE CHARACTERISTICS						
Diode forward current	I _S	T _C =25℃			-1.4	A
Diode pulsed forward current	I _{SM}				-20	A
Diode Forward voltage (note 1)	V _{DS}	V _{GS} =0V, I _S =-4A			-1.2	V
Diode reverse recovery time (note 2)	t _{rr}	I _F =-4A, dI/dt=100A/μs		24	48	ns
Diode reverse recovery charge (note 2)	Q _{rr}			8	16	nC

Notes: 1. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.

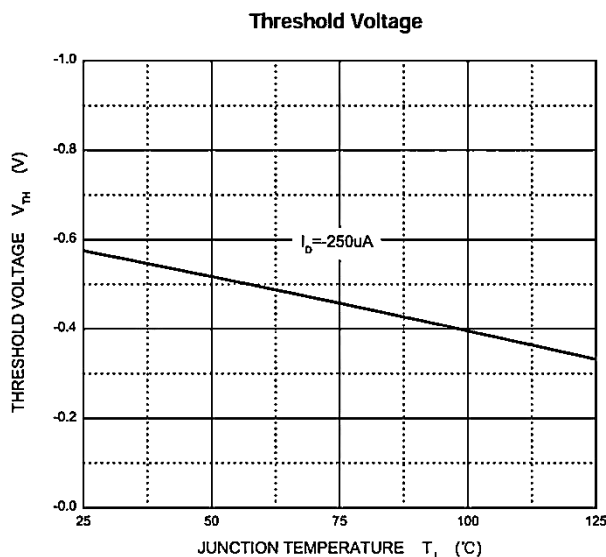
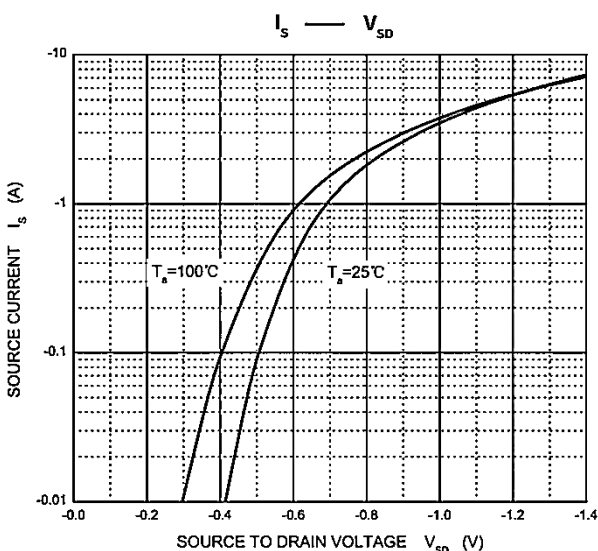
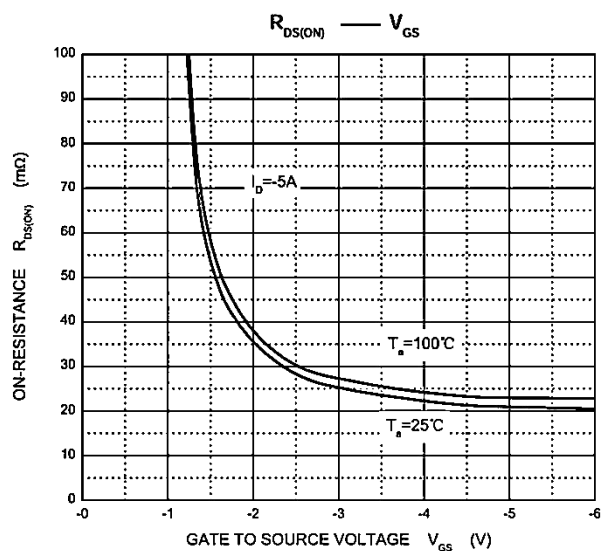
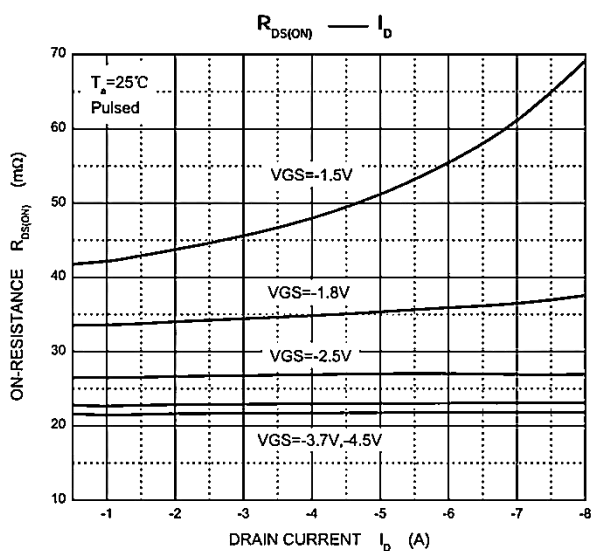
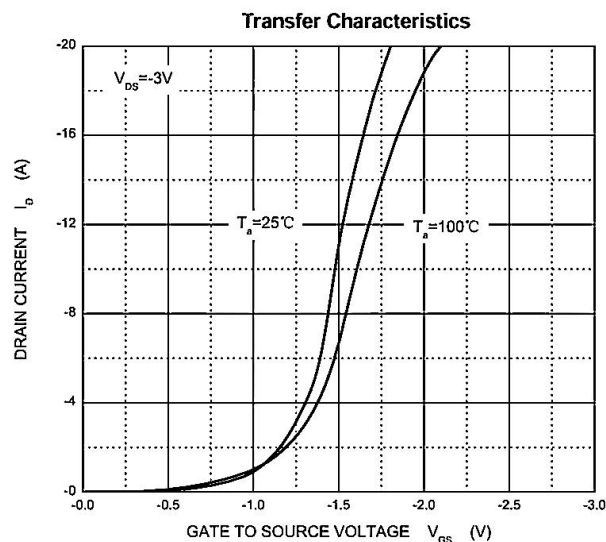
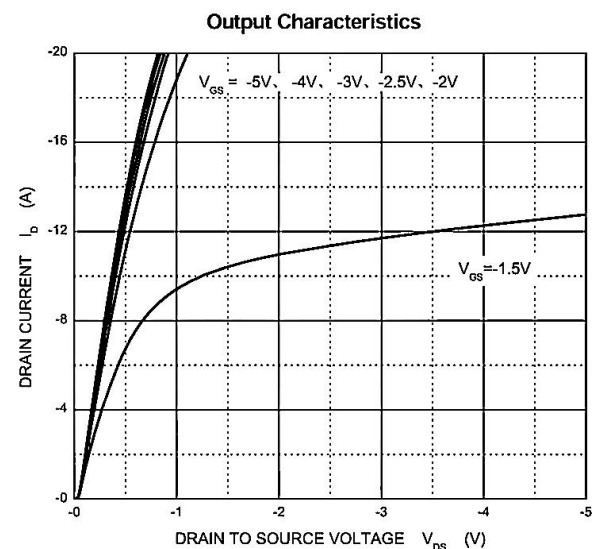
2. Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTICS

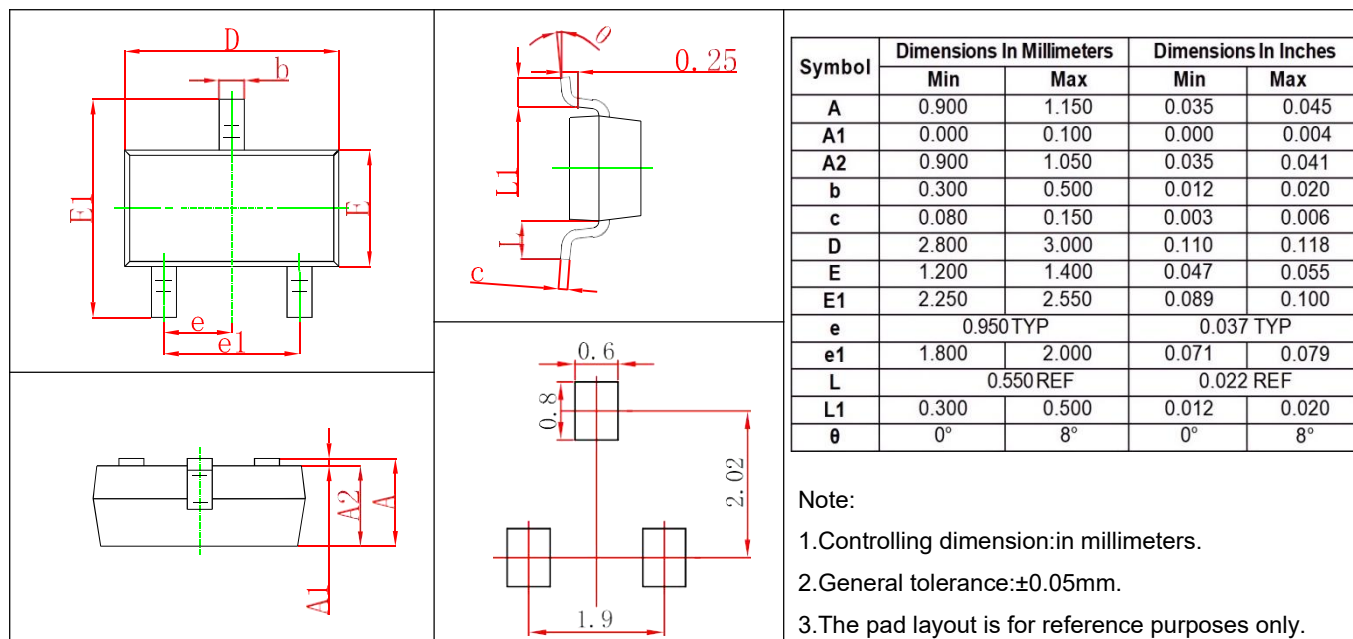




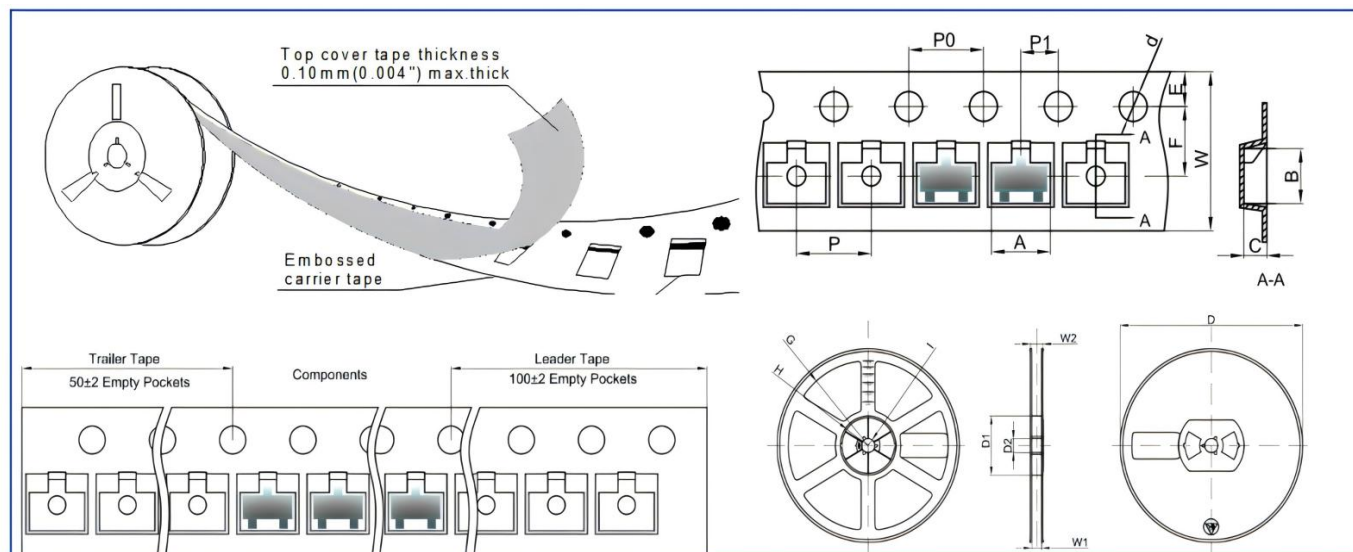
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SOT23 PACKAGE OUTLINE DIMENSIONS



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	