



HY2300

N-CHANNEL POWER MOSFET

6A, 20V N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The HY2300 meet the ROHS and Green Product requirement with full function reliability approved.

FEATURE

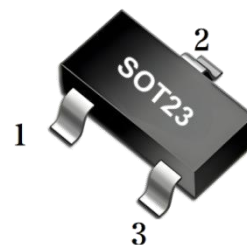
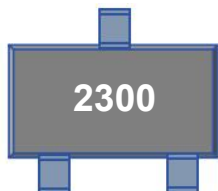
- * Low Intrinsic Capacitances.
- * Excellent Switching Characteristics.
- * Extended Safe Operating Area.
- * Unrivalled Gate Charge :Qg= 6nC
- * BVDS=20V, ID=6A
- * RDS(on) : 27mΩ (Max) @VG=4.5V, ID=4.5A
- * 100% Avalanche Tested

APPLICATION

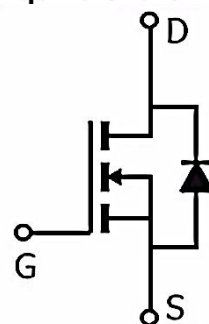
- * Load Switch for Portable Devices
- * DC/DC Converter

MARKING

Type Code: Marking: 2300



Equivalent Circuit



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

SYMBOL	PARAMETER	VALUE	UNIT
VDS	Drain-Source Voltage	20	V
VGS	Gate Source Voltage	±12	V
ID	Continuous Drain Current	6	A
IDM	Pulsed Drain Current (Note1)	20	A
PD	Maximum Power Dissipation	1.25	W
TJ	Storage Temperature	150	°C
TSTG	Thermal Resistance From Junction To Ambient	-50~150	°C/W
RθJA	Thermal Resistance from Junction to Ambient(t ≤ 5s)	100	°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)

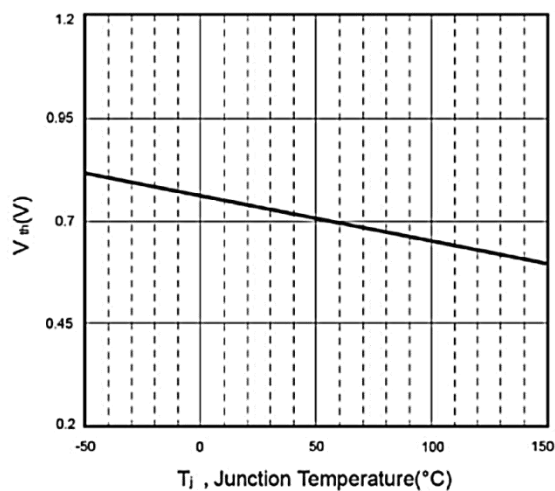
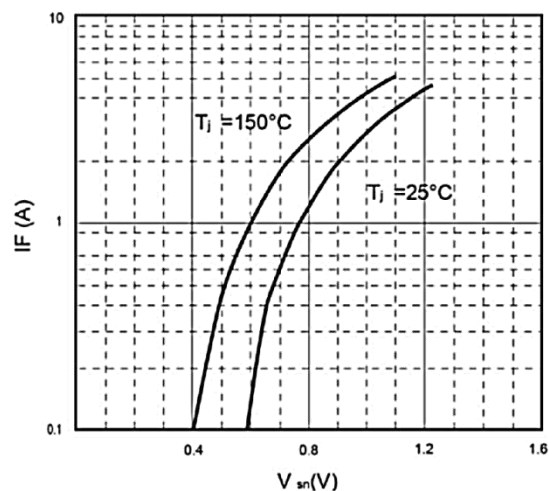
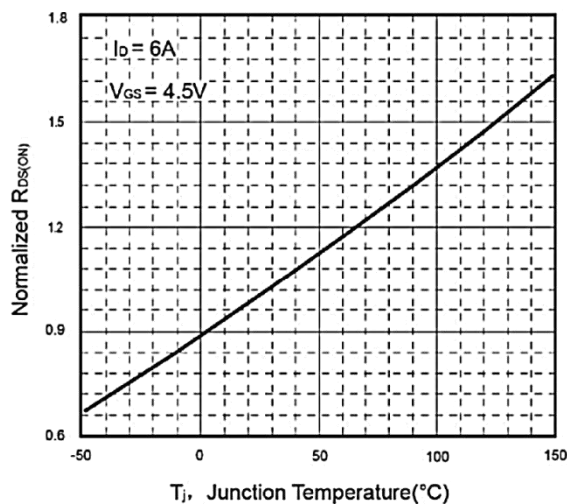
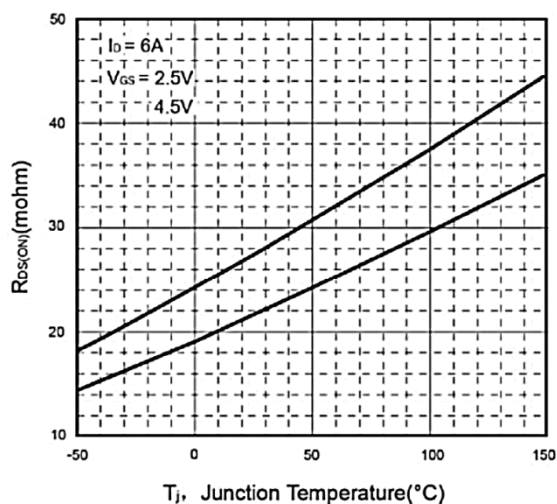
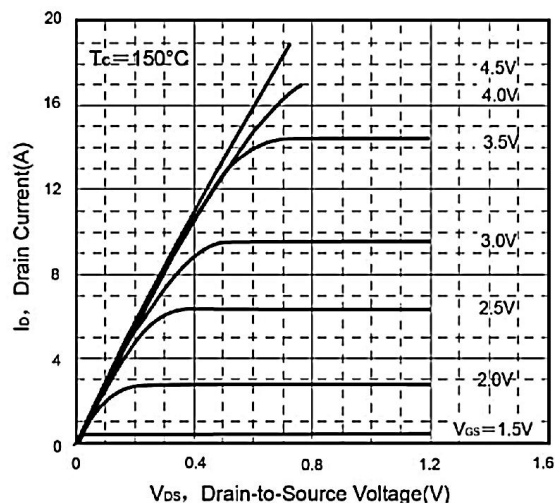
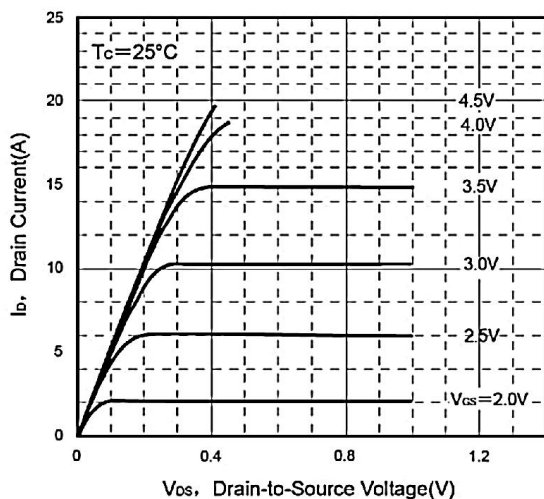
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _D =16V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _D =0V			±100	nA
ON CHARACTERISTICS (Note 3)						
Gate-Source Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =250μA	0.45	0.65	1	V
Drain-source on-state resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =4.5A		22	27	mΩ
		V _{GS} =2.5V, I _D =3.5A		27.8	38	
		V _{GS} =1.8V, I _D =2A		36	45	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{GS} =0V,V _D = 30V,f=1.0MHz		247		pF
Output Capacitance	C _{OSS}			34		
Reverse Transfer Capacitance	C _{RSS}			19.5		
SWITCHING CHARACTERISTICS						
Total gate charge	Q _g	V _D =30V,V _{GS} =4.5V,I _D =3A		6		nC
Gate-source charge	Q _{gs}			1		
Gate-drain charge	Q _{gd}			1.3		
Turn-On Delay Time	t(on)	V _D =10V, I _D =1.5A R _G =1Ω		6		nS
Turn-On Rise time	t _r			15		
Turn-Off Delay Time	t(off)			15		
Turn-Off Fall time	t _f			10		
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Current	I _S				6	A
Diode Forward Voltage	V _{SD}	I _S =6A,V _{GS} =0V			1.3	V



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TYPICAL CHARACTERISTICS

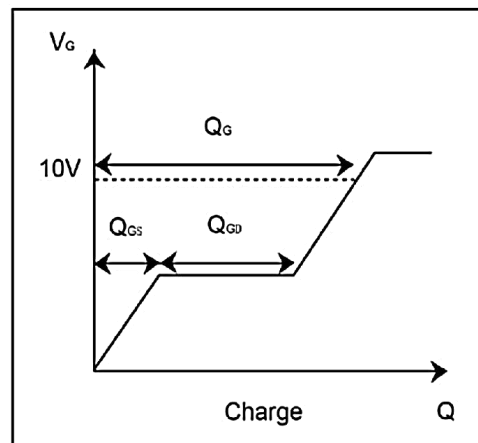
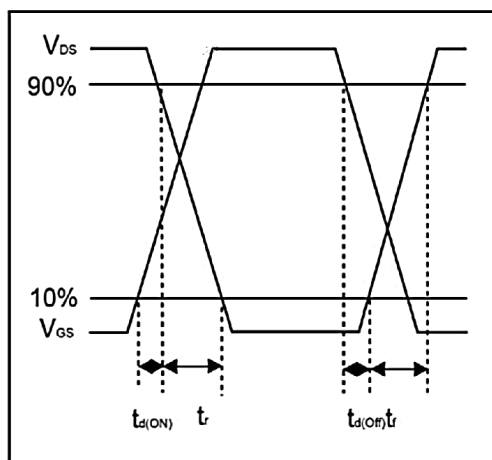
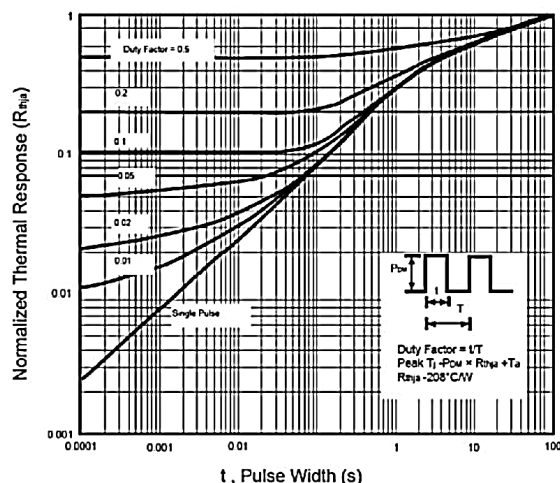
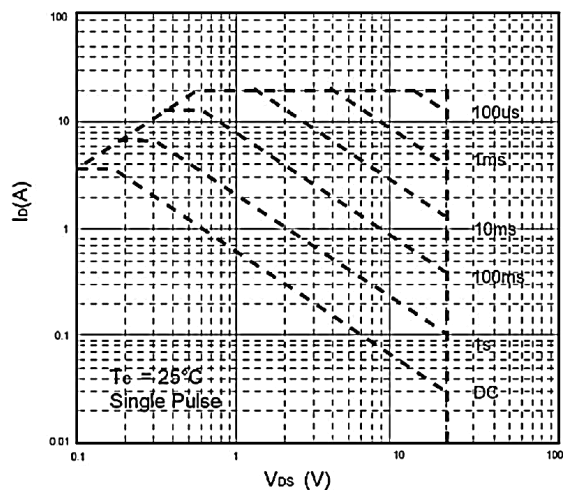
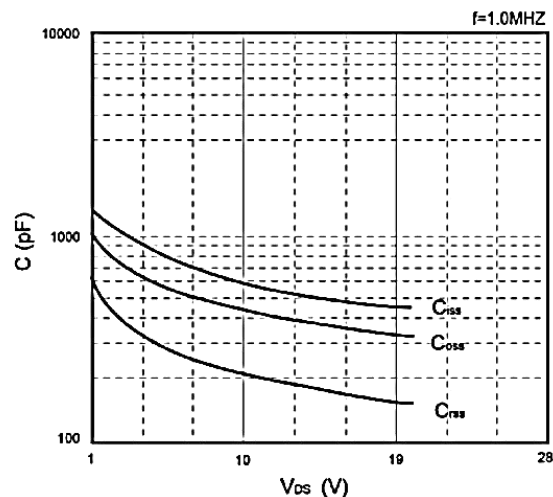
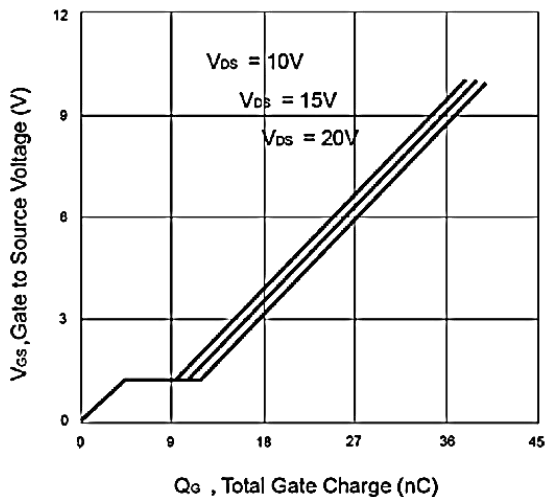




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■ TYPICAL CHARACTERISTIC(Con.t)

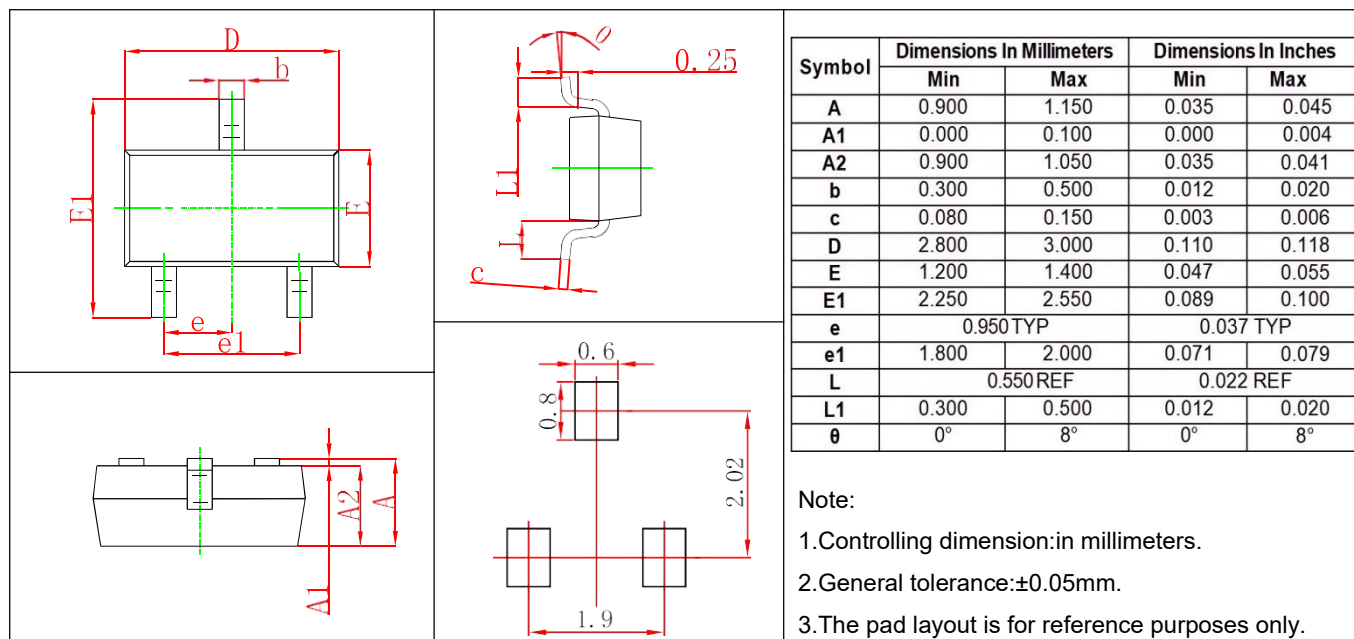




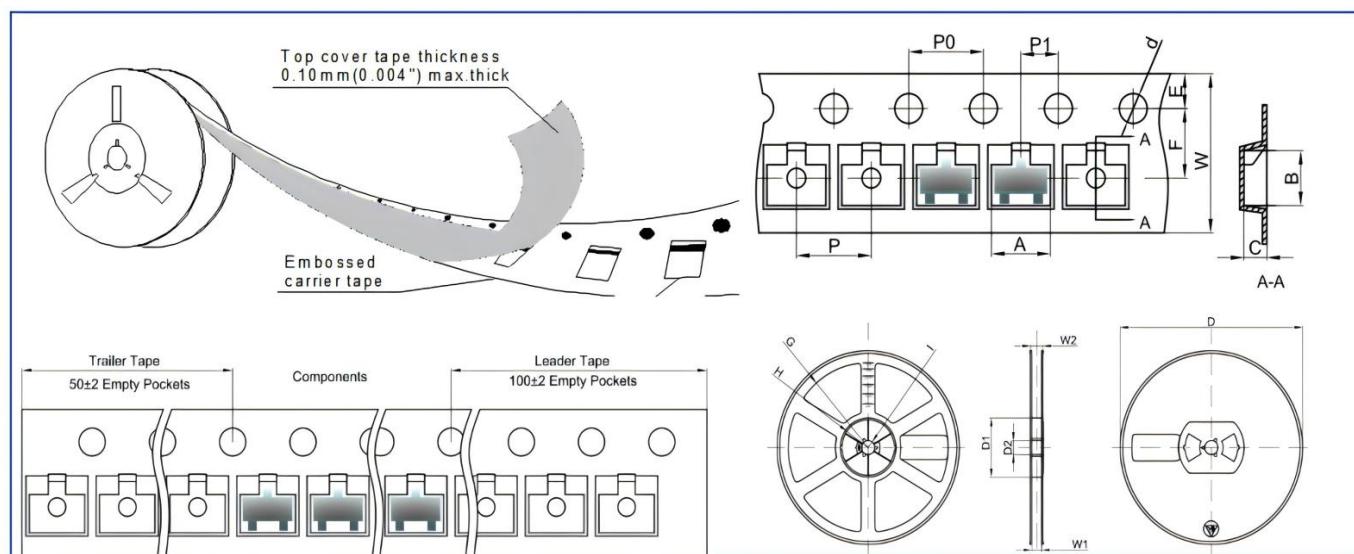
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SOT23 PACKAGE OUTLINE DIMENSIONS



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	