



HY3406

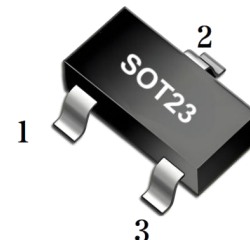
N-CHANNEL MOSFET

3.6A, 30V N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The HY3406 use advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for use as a load switch or in PWM applications.

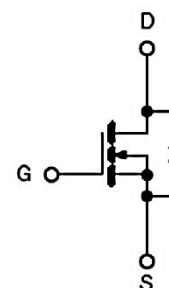
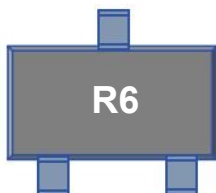
The HY3406 meet the ROHS and Green Product requirement with full function reliability approved.



Equivalent Circuit

MARKING

Type Code: Marking: R6



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	3.6	A
I _{DM}	Pulsed Drain Current (note 1)	15	A
P _D	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 CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30			V
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} =V_{GS}, I_D =250\mu A$	1		3	V
Drain-source on-state resistance(Note 2)	$R_{DS(on)}$	$V_{GS}=10V, I_D=3.6A$		40	65	m Ω
		$V_{GS}=4.5V, I_D=2.8A$		72	105	
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_S =1A$			1	V
Forward tranconductance(Note 2)	g_{FS}	$V_{DS} =5V, I_D=3.6A$	3			S
DYNAMIC CHARACTERISTICS(Note 3)						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=15V, f=1MHz$			375	pF
Output Capacitance	C_{OSS}			57		
Reverse Transfer Capacitance	C_{RSS}			39		
SWICHING CHARACTERISTICS(Note 3)						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15V, R_L=2.2\Omega,$ $V_{GS}=10V, R_{GEN}=3\Omega$		4.6		ns
Rise Time	t_r			1.9		
Turn-Off Delay Time	$t_{d(off)}$			20.1		
Fall Time	t_f			2.6		

Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. 1. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.
3. These parameters have no way to verify.

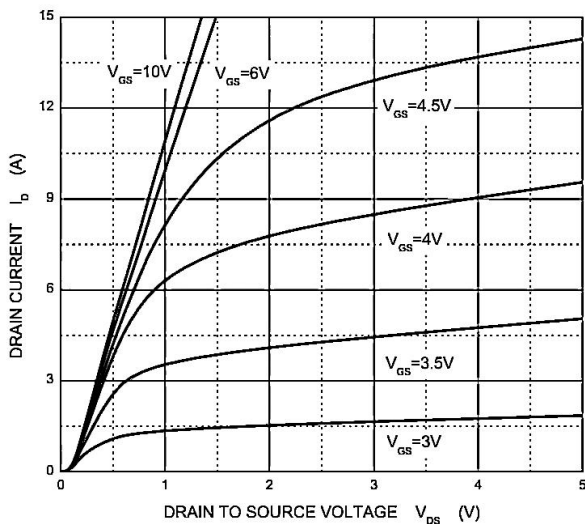


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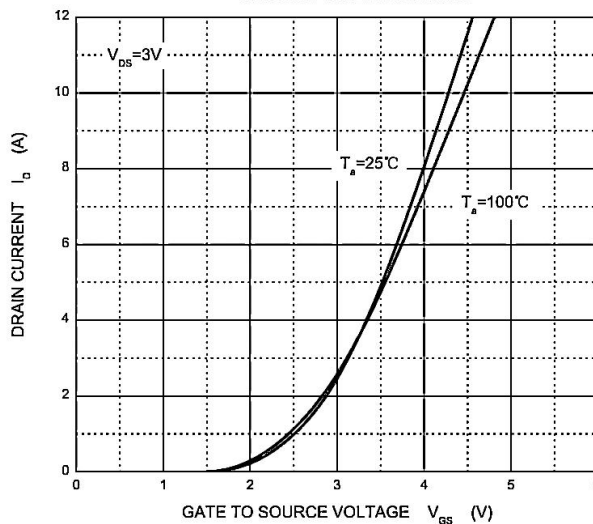
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TYPICAL CHARACTERISTICS

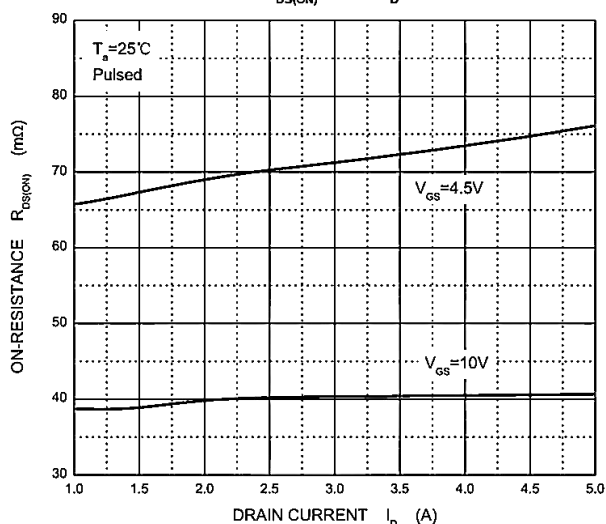
Output Characteristics



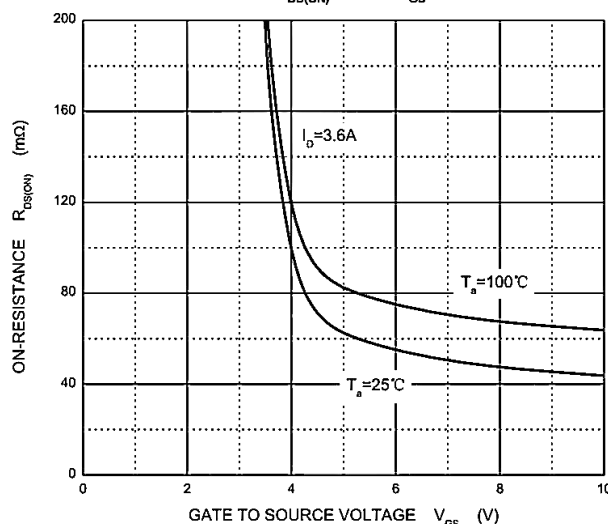
Transfer Characteristics



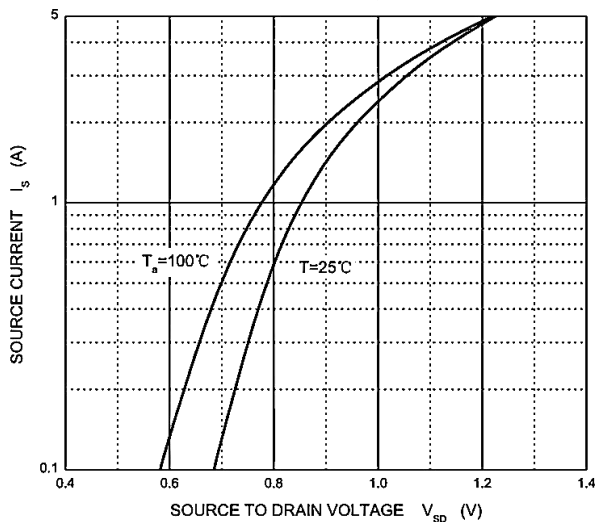
$R_{DS(ON)}$ — I_D



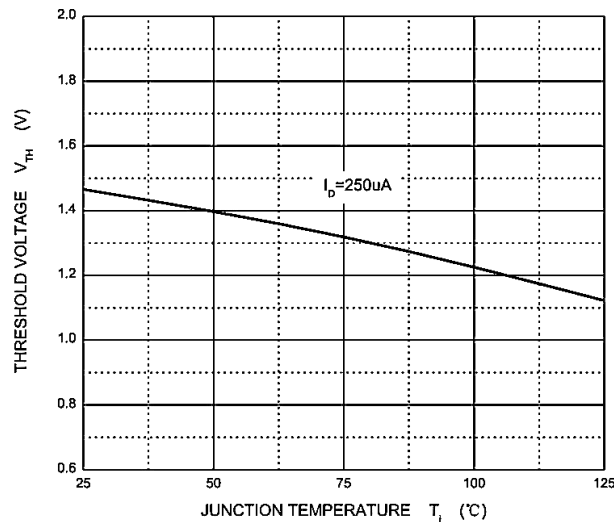
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

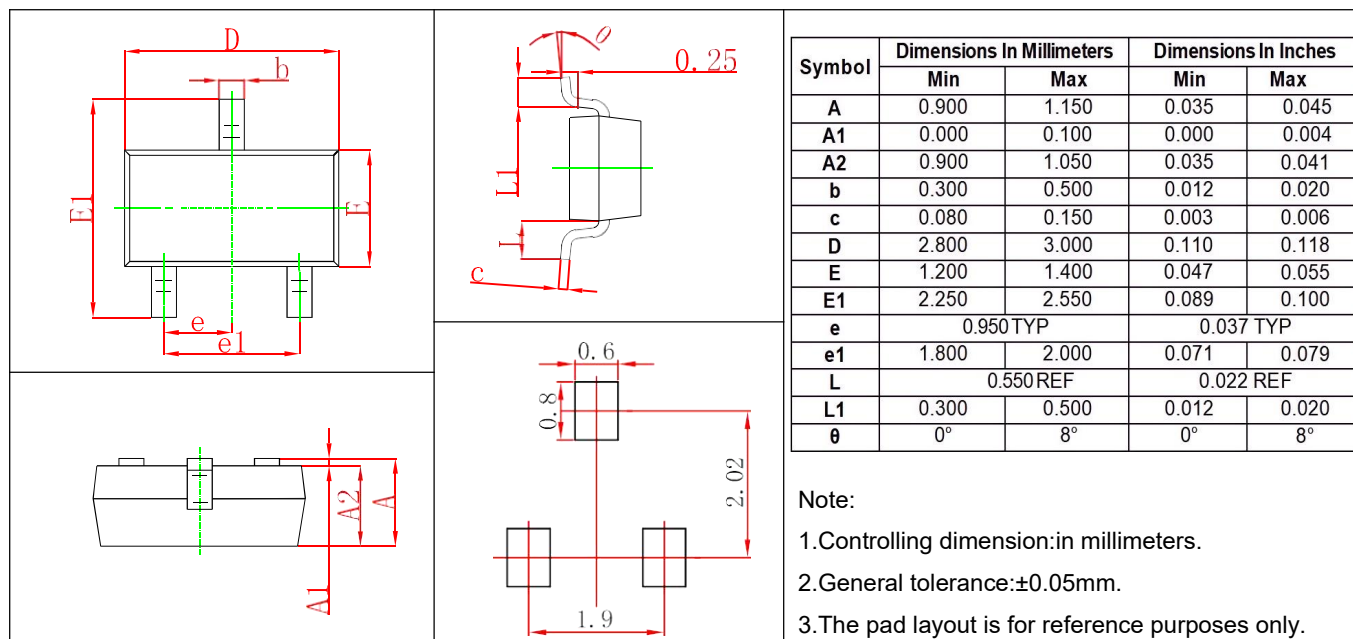




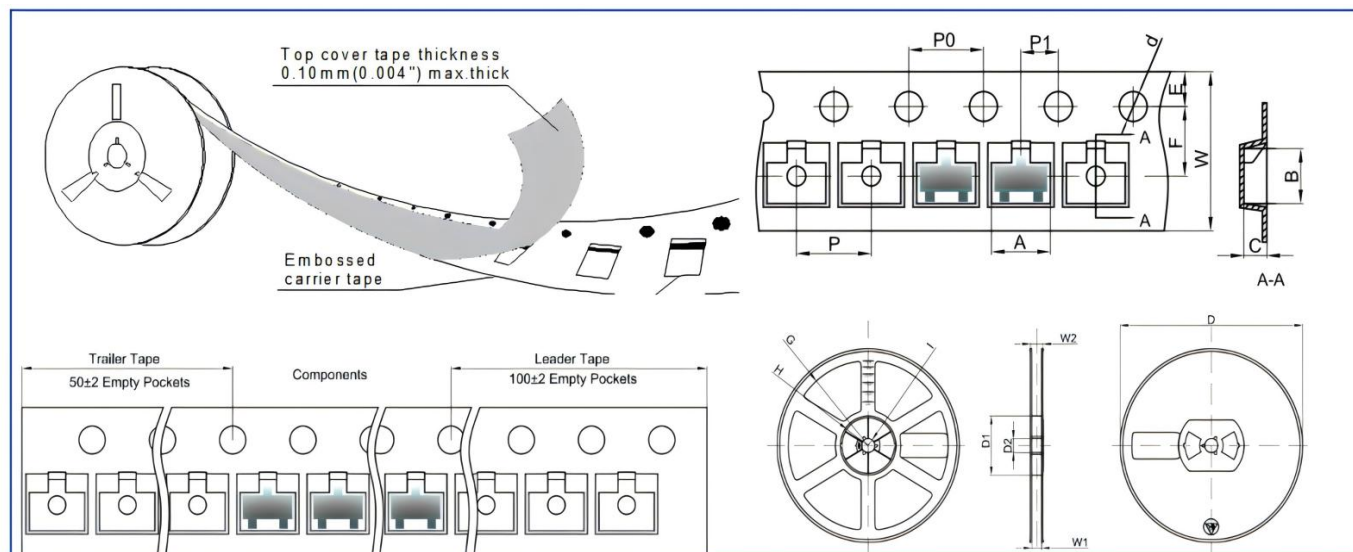
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■ SOT23 PACKAGE OUTLINE DIMENSIONS



■ 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	