



HY3401

P-CHANNEL MOSFET

-4.2A, -30V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The HY3401 is P-channel enhancement mode Power MOSFET, designed with high density cell, with fast switching speed, low on-resistance, excellent thermal and electrical capabilities and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

The HY3401 meet the ROHS and Green Product requirement with full function reliability approved.

FEATURE

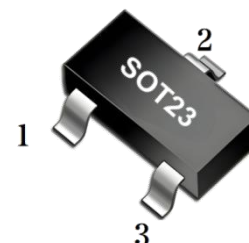
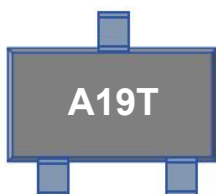
- * High dense cell design for extremely low $R_{DS(ON)}$
- * Exceptional on-resistance and maximum DC current capability

APPLICATION

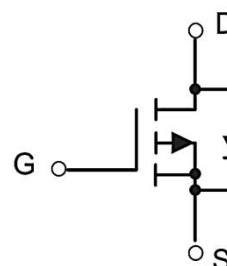
- * Load/Power Switching
- * Interfacing Switching

MARKING

Type Code: Marking: A19T



Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS($T_A=25^{\circ}\text{C}$, unless otherwise specified.)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate Source Voltage	± 12	V
I_D	Continuous Drain Current	-4.2	A
I_{DM}	Pulsed Drain Current *	-16.8	A
P_D	Power Dissipation	0.35	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55~150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient ($t < 5s$)	357	$^{\circ}\text{C/W}$

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.

* $T_C=25^{\circ}\text{C}$, $P_w \leq 10\mu s$, Duty cycles $\leq 1\%$.



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■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, 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	-30			V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	μA
ON CHARACTERISTICS						
Drain-source on-state resistance(Note 1)	R _{DS(ON)}	V _{GS} =-10V, I _D =-4.2A		50	65	mΩ
		V _{GS} =-4.5V,I _D =-4A		60	75	
		V _{GS} =-2.5V,I _D =-1A		75	90	
Gate Threshold Voltage	V _{GS(TH)}	V _{GS} =V _{DS} ,I _D =-250μA	-0.7	-0.9	-1.3	V
Forward tranconductance(Note 1)	g _{FS}	V _{DS} =-5V, I _D =-5A	7			S
DYNAMIC CHARACTERISTICS(Note 2)						
Input Capacitance	C _{ISS}	V _{GS} =0V,V _{DS} =-15V,f=1MHz		954		pF
Output Capacitance	C _{OSS}			115		
Reverse Transfer Capacitance	C _{RSS}			77		
SWICHING CHARACTERISTICS(Note 2)						
Turn-On Delay Time	td(on)	V _{DS} =-15V, R _L =3.6Ω, V _{GS} =-10V,R _{GEN} =6Ω			6.3	ns
Turn-On Rise Time	tr				3.2	
Turn-Off Delay Time	td(off)				38.2	
Turn-Off Fall Time	tf				12	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode forward voltage (note 1)	VSD	IS=-1A,VGS=0V			-1	V

Notes:

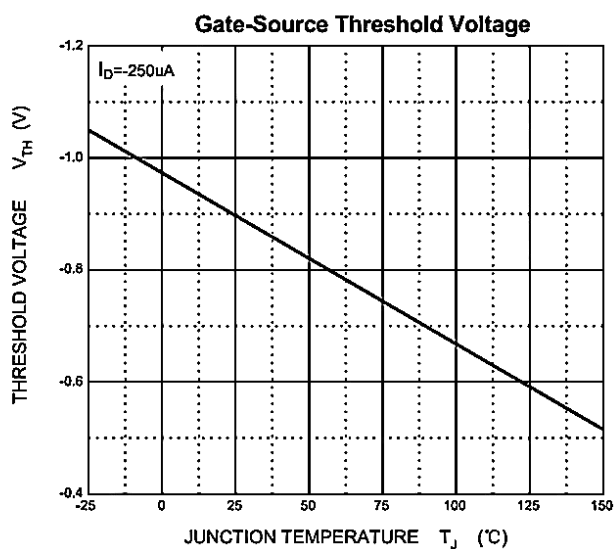
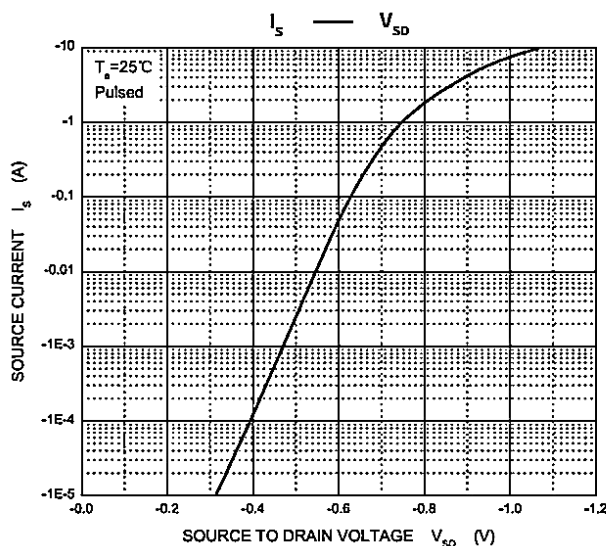
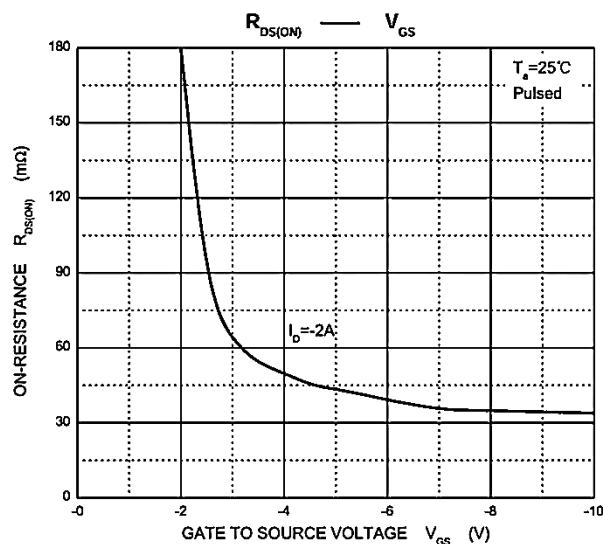
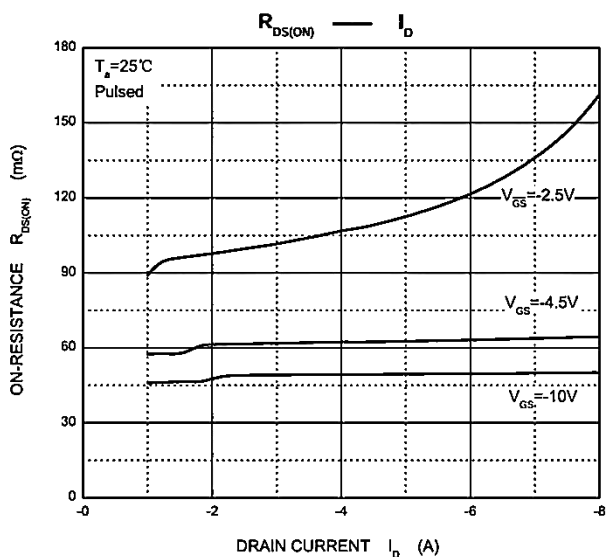
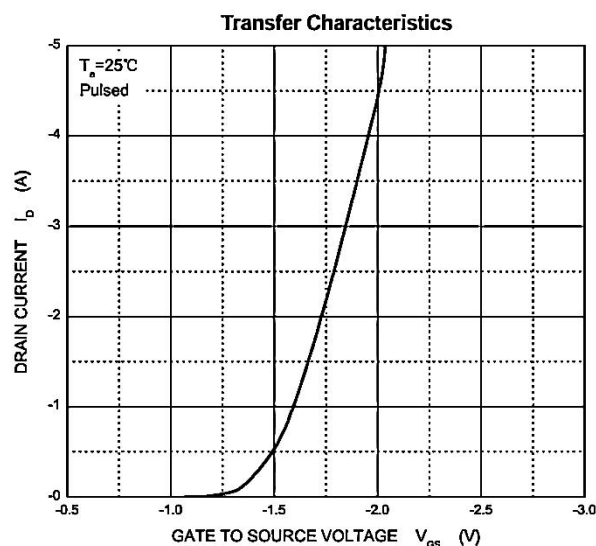
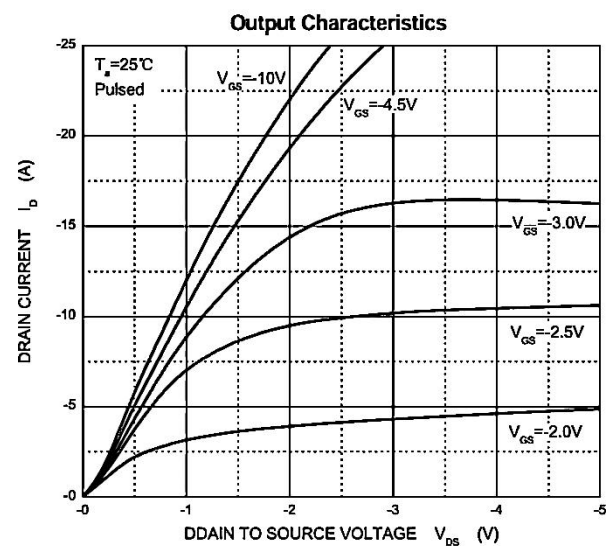
1. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
2. These parameters have no way to verify.



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TYPICAL CHARACTERISTICS

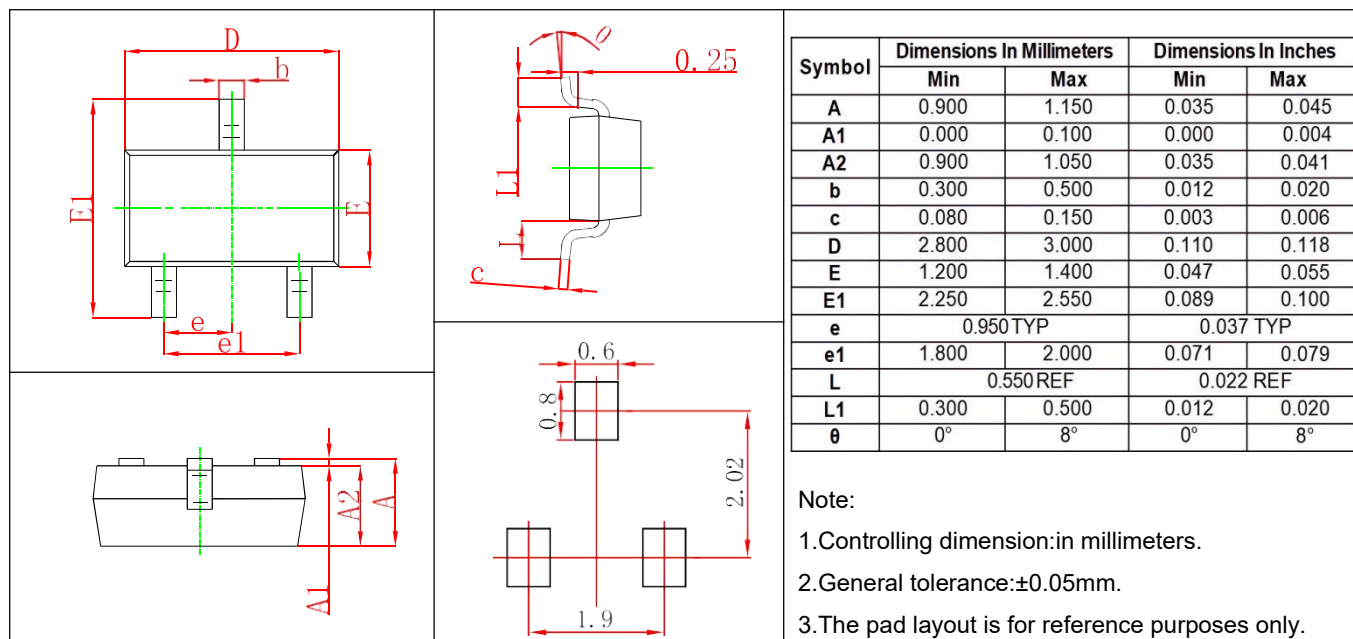




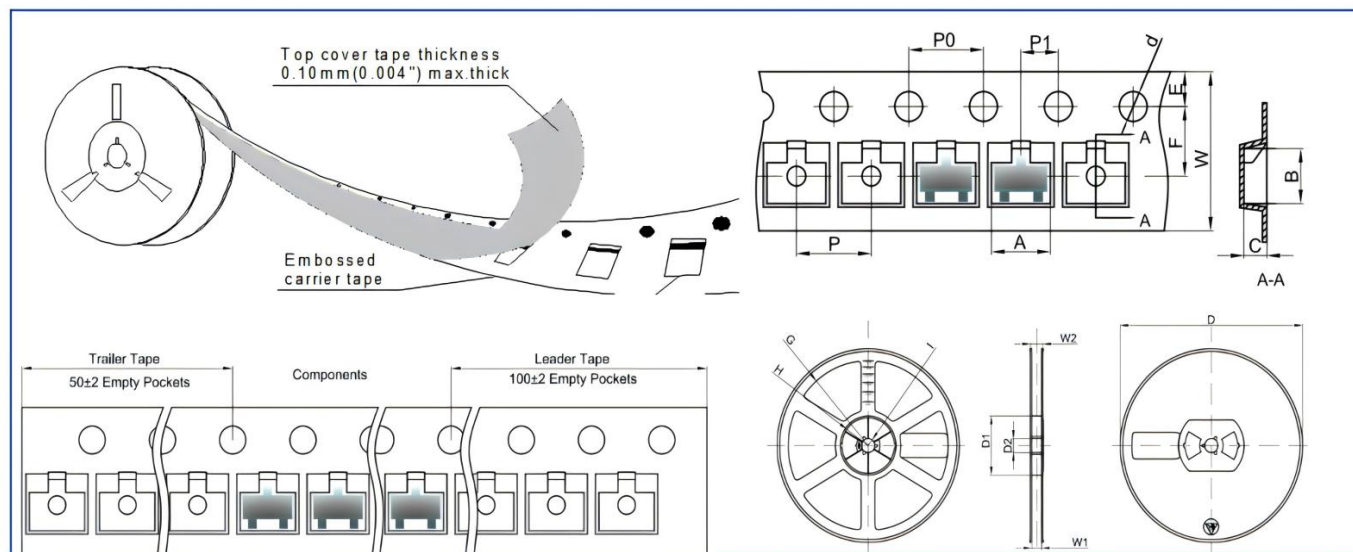
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■ SOT23 PACKAGE OUTLINE DIMENSIONS



■ 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	