



HY3420

N-CHANNEL MOSFET

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

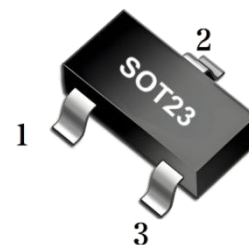
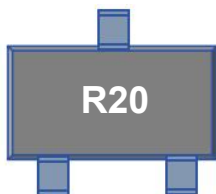
■ DESCRIPTION

The HY3420 uses advanced trench technology to provide excellent $R_{DS(on)}$. This device is suitable for use as a uni-directional or bi-directional load switch.

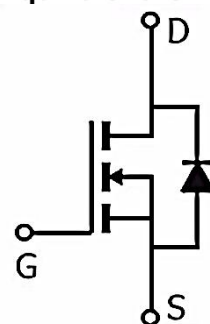
The HY3420 meet the ROHS and Green Product requirement with full function reliability approved.

■ MARKING

Type Code: Marking: R20



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	25	A
PD	Power Dissipation	0.35	W
TJ	Junction Temperature	150	°C
TSTG	Storage Temperature	-55~150	°C
RθJA	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
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20			V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V,T _J =25℃			1	μA
		V _{DS} =16V, V _{GS} =0V,T _J =125℃			1	mA
ON CHARACTERISTICS						
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5	0.7	1	V
Drain-source on-state resistance(Note 2)	R _{DS(ON)}	V _{GS} =10V, I _D =6A		19	24	mΩ
		V _{GS} =4.5V,I _D =5A		22	27	
		V _{GS} =2.5V,I _D =4A		27	42	
		V _{GS} =1.8V,I _D =2A		38	74	
Forward transconductance	g _{FS}	V _{DS} =5V, I _D =3.8A	4			S
DYNAMIC CHARACTERISTICS(Note 3)						
Input Capacitance	C _{ISS}	V _{GS} =0V,V _{DS} =10V,f=1MHz		630		pF
Output Capacitance	C _{OSS}			164		
Reverse Transfer Capacitance	C _{RSS}			137		
Gate resistance	R _g	V _{DS} =0V,V _{GS} =0V,f =1MHz		1.5		Ω
SWICHING CHARACTERISTICS(Note 3)						
Turn-On Delay Time	td(on)	V _{DS} =15V, R _L =2.7Ω, V _{GS} =10V,R _{GEN} =3Ω		5.5		ns
Turn-On Rise Time	tr			14		
Turn-Off Delay Time	td(off)			29		
Turn-Off Fall Time	tf			10.2		
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V I _D =6A		8.8		nC
Gate-Source Charge	Q _{gs}			1		
Gate-Drain Charge	Q _{gd}			3.7		
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode forward voltage(Note 2)	V _{SD}	I _S =1A,V _{GS} =0V		0.75	1	V
Continuous drain-source diode orward current	I _S				6	A
Pulsed drain-source diode forward current	I _{SM}	(Note 1)			25	A

Notes: 1.Repetitive Rating : Pulse width limited by maximum junction temperature.

2. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.

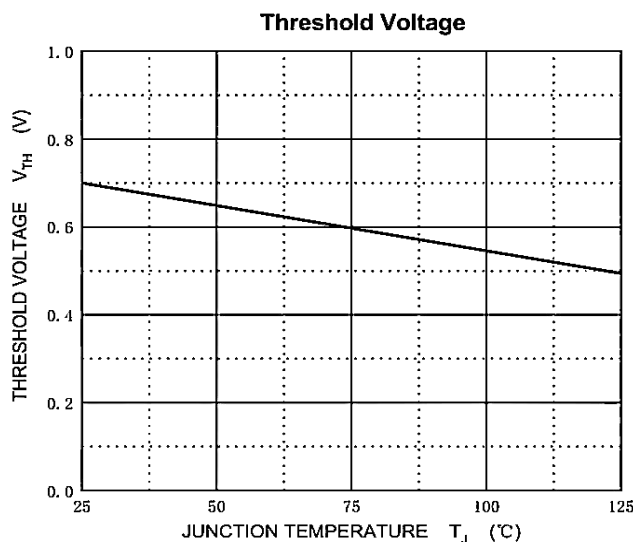
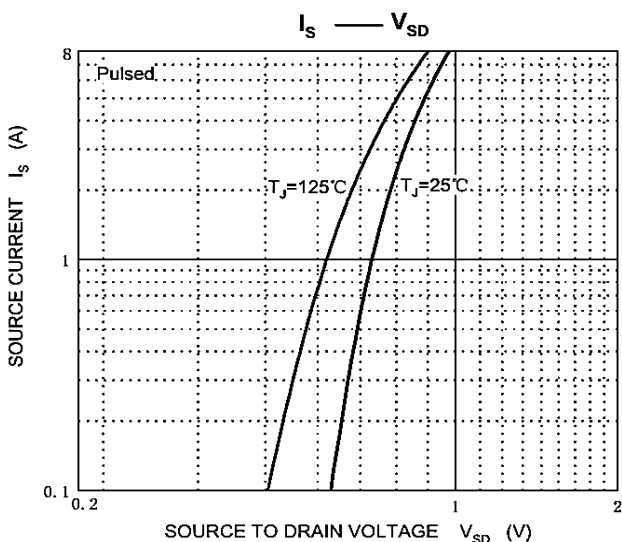
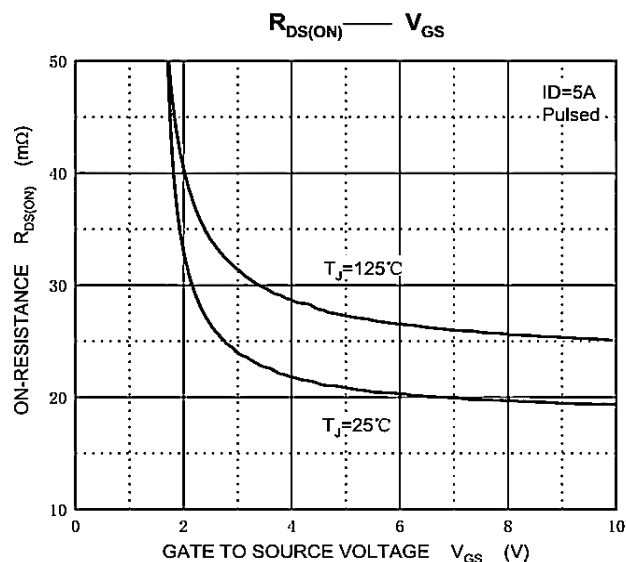
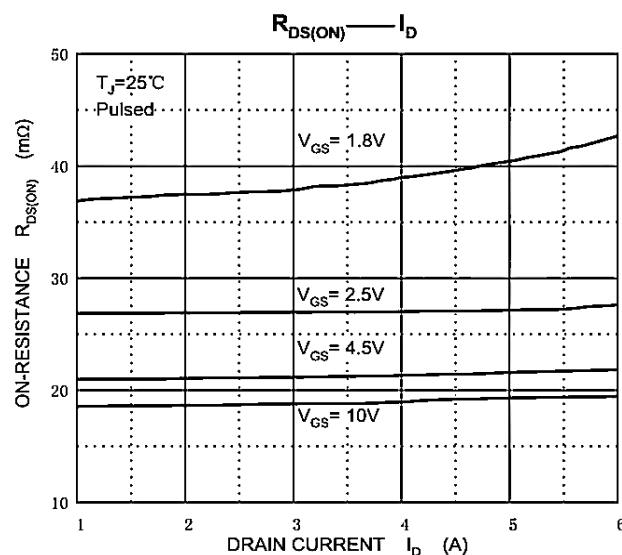
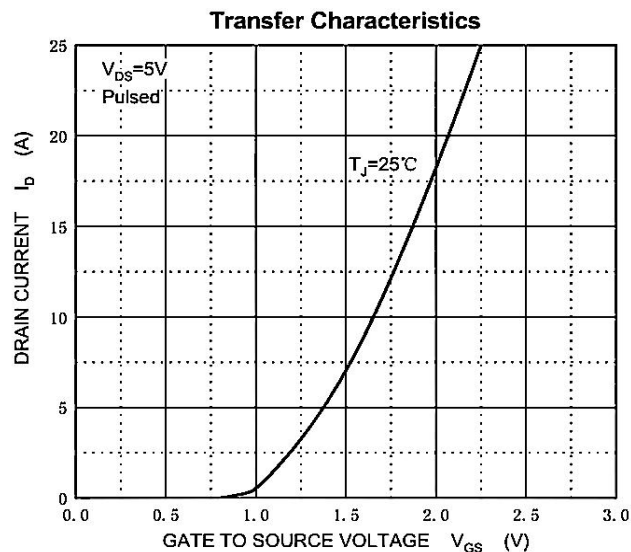
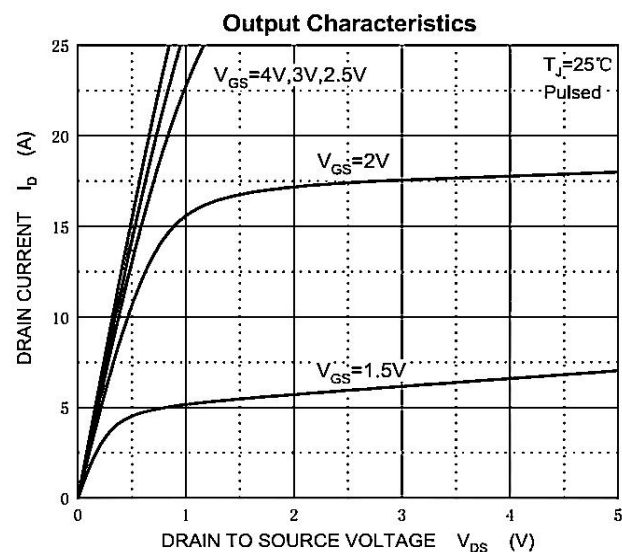
3. 3.Guaranteed by design, not subject to production testing.



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TYPICAL CHARACTERISTICS

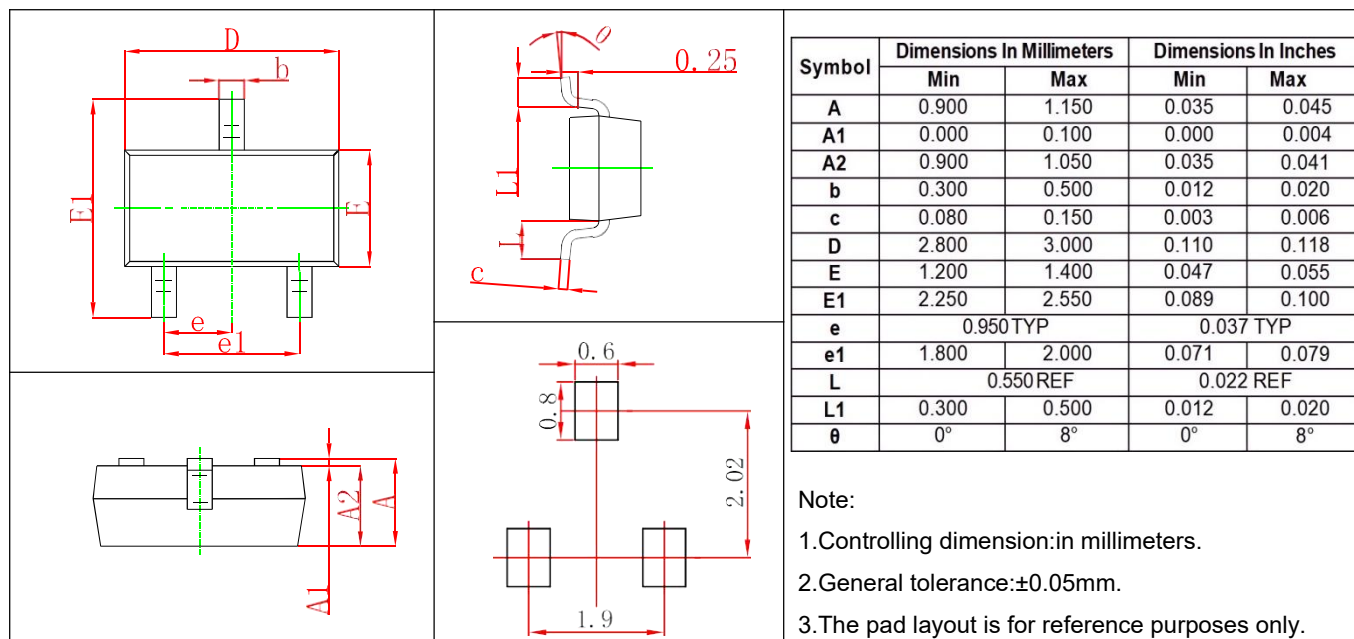




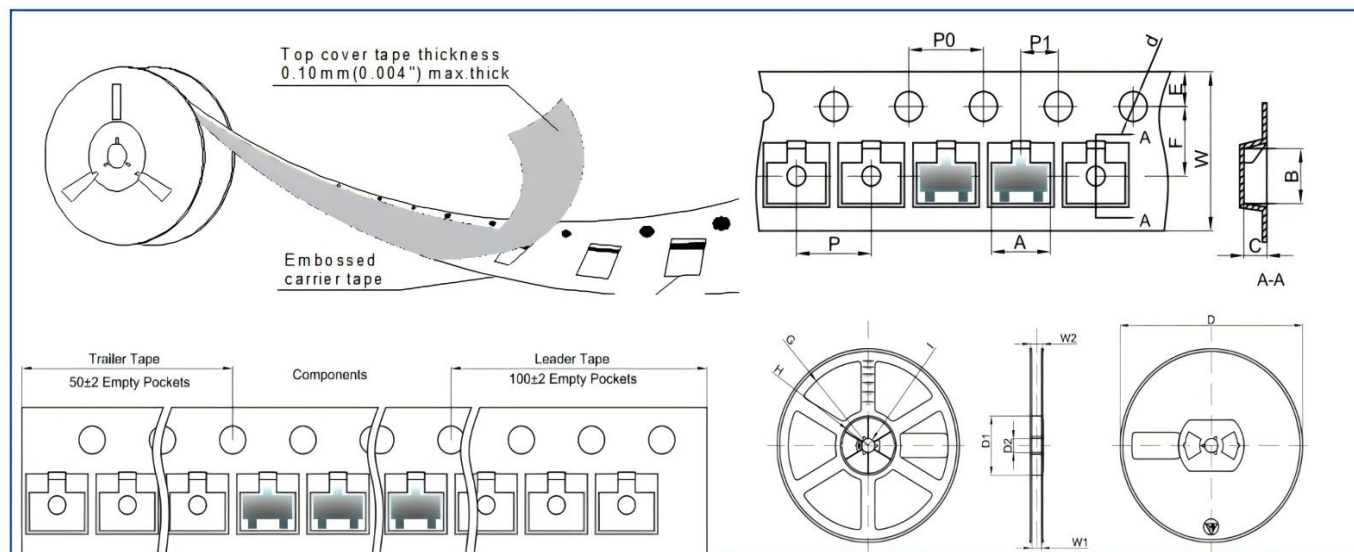
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■ SOT23 PACKAGE OUTLINE DIMENSIONS



■ 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	