

FMOS2SK3018WT-H

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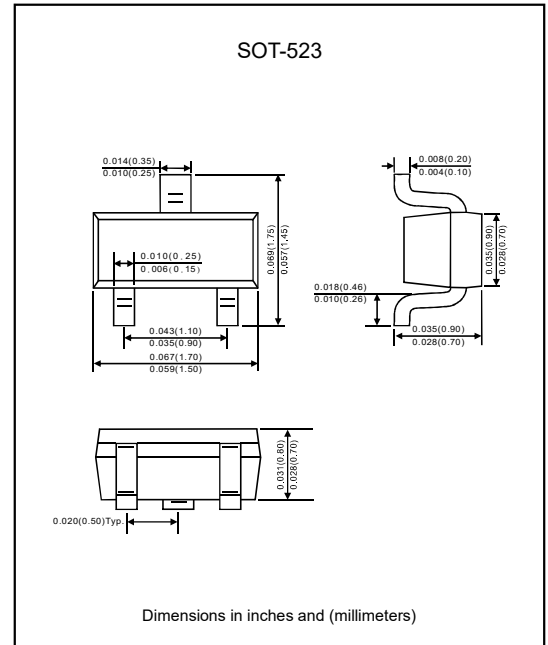
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FMOS2SK3018WT-H**30V 100mA N-Channel MOSFET****Features**

- Low on-resistance.
- Fast switching speed.
- Low voltage drive makes this device ideal portable equipment.
- Easily designed drive circuits.
- Easy to parallel.
- ESD protected : 1KV.
- Lead-free parts meet RoHS requirements.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-523.
- Terminals : Solder plated, solder able per MIL-STD-750, Method 2026.
- Mounting Position : Any.
- Weight : Approximated 0.003 gram.

Package outline**Maximum ratings** (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-source voltage	V_{DS}	30	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain Current	I_D	0.1	A
Power dissipation	P_D	0.15	W
Junction temperature	T_J	+150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$
Thermal resistance Junction to ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$

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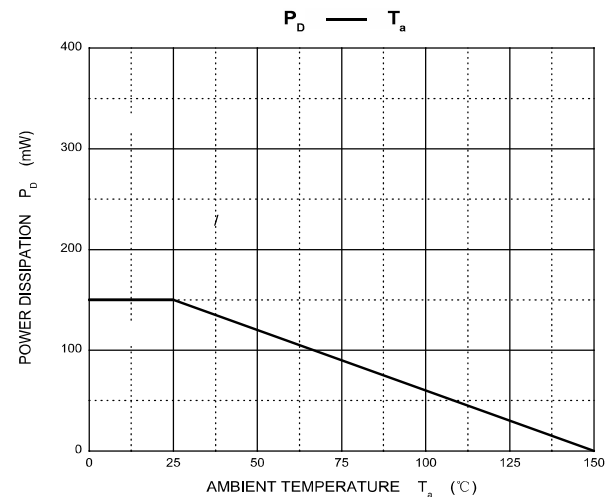
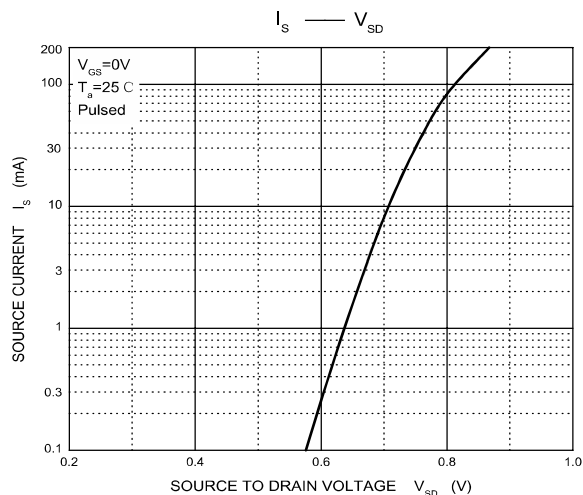
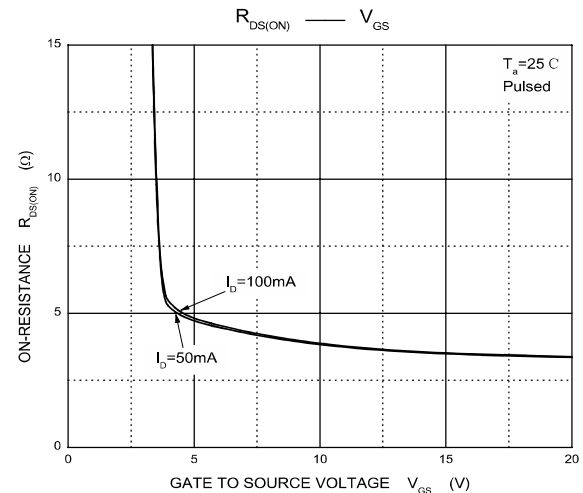
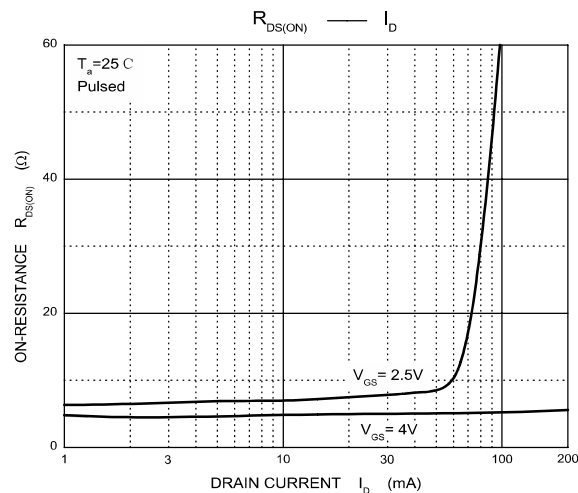
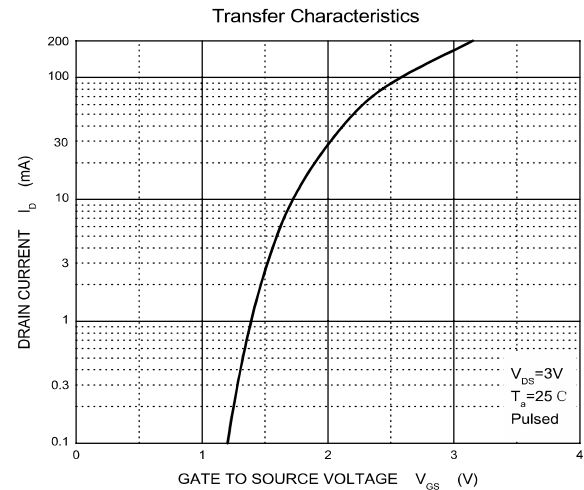
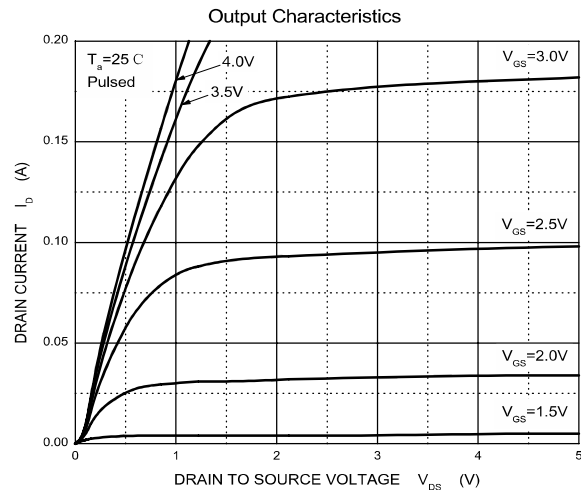
Electrical characteristics (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} =0V, I _D =10μA	30			V
Drain-source leakage current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			0.2	μA
Gate-source leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±500	nA
Gate threshold voltage	V _{GS(TH)}	V _{DS} =3V, I _D =100μA	0.8		1.5	V
Static drain-source on-resistance ^a	R _{DS(ON)}	V _{GS} =4.5V, I _D =10mA			8	Ω
		V _{GS} =2.5V, I _D =1mA			13	Ω
Forward transconductance ^a	g _{FS}	V _{DS} =3V, I _D =10mA	20			mS
Dynamic characteristics						
Input capacitance	C _{iss}	V _{DS} =5V, V _{GS} =0V, f = 1MHz		13		pF
Output capacitance	C _{oss}			9		
Reverse transfer capacitance	C _{rss}			4		
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{GS} =5V, V _{DD} =5V, I _D =10mA, R _g =10Ω, R _L =500Ω		15		ns
* These parameters have no way to verify. Rise time	t _r			35		
Turn-off delay time	t _{d(off)}			80		
Fall time	t _f			80		

* These parameters have no way to verify.

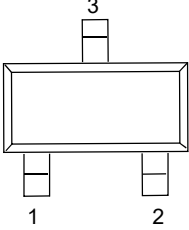
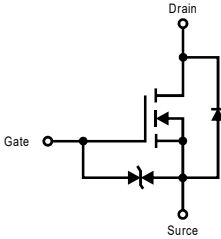
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Rating and characteristic curves



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Pinning information

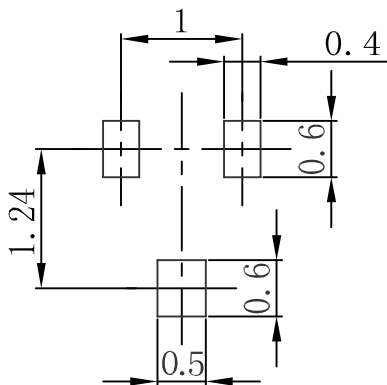
Pin	Simplified outline	Symbol
Pin 1 Gate Pin 2 Source Pin 3 Drain		

Marking

Type number	Marking code
FMOS2SK3018WT	KN

Suggested solder pad layout

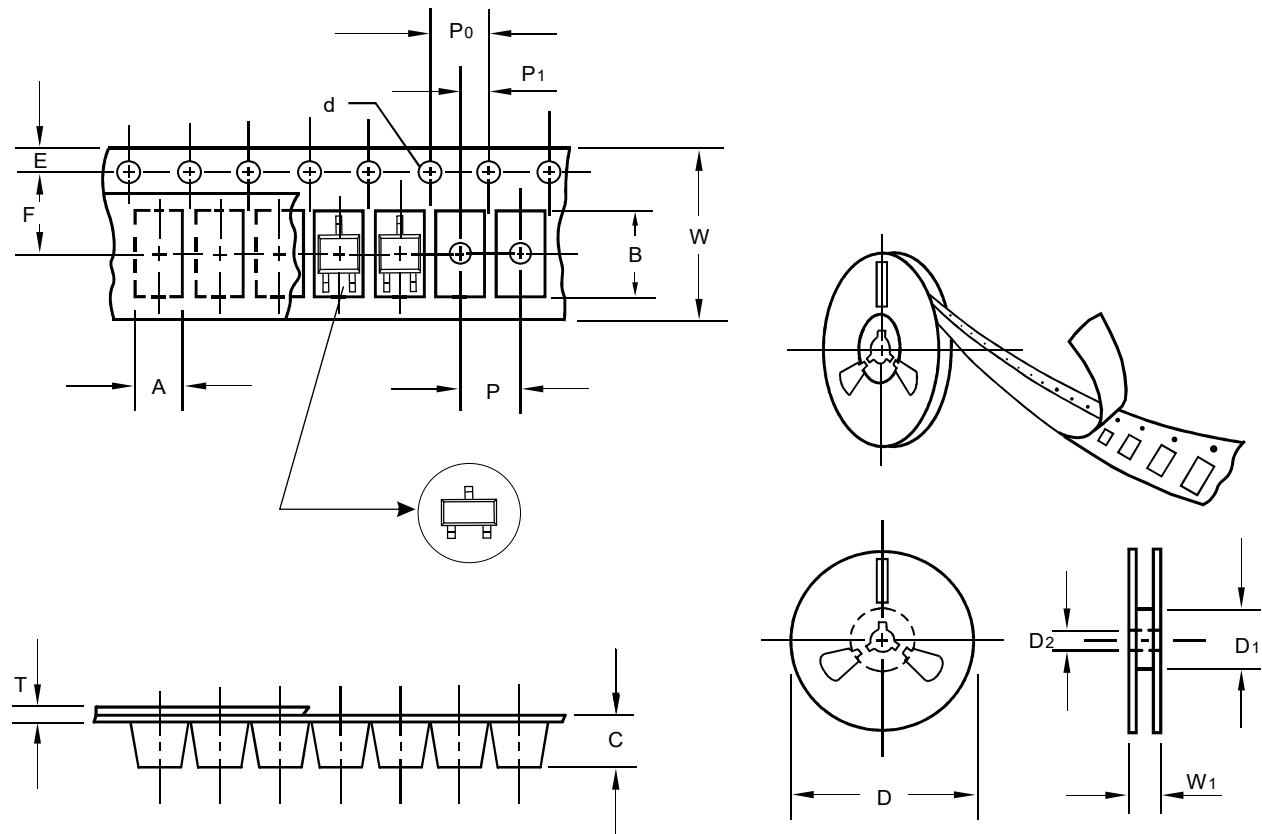
SOT-523



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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Packing information



unit:mm

Item	Symbol	Tolerance	SOT-523
Carrier width	A	0.1	1.85
Carrier length	B	0.1	1.85
Carrier depth	C	0.1	0.875
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	54.40
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W1	1.0	12.30

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

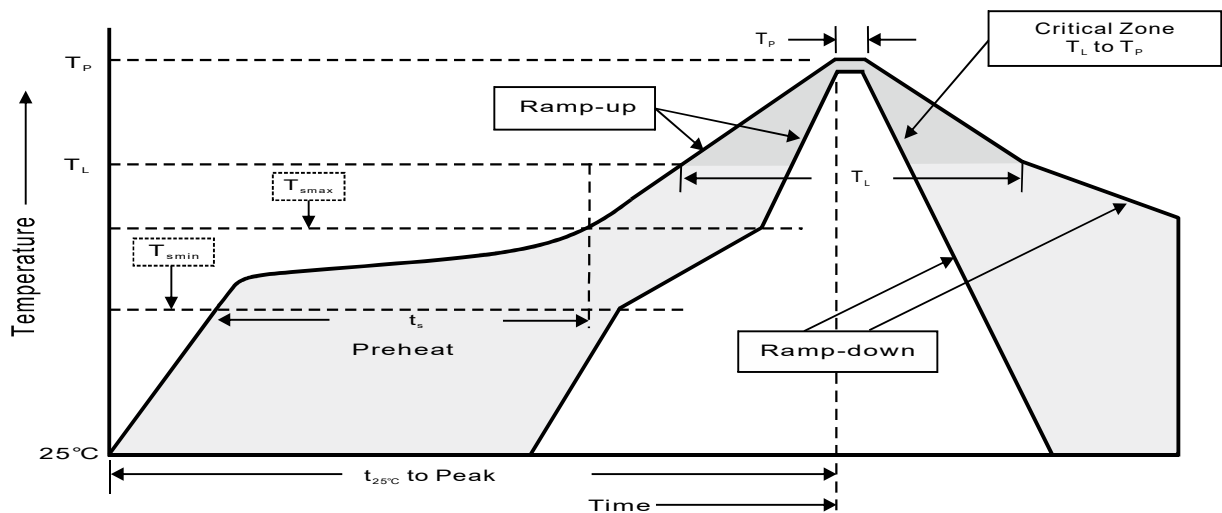
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-523	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000	11.6

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature = 5°C ~ 40°C Humidity = 55%, ±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile feature	Soldering condition
Average ramp-up rate (T_L to T_p)	< 3 °C/sec
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (Min to Max) (t_s)	150°C 200°C 60 ~ 120 sec
T_{smax} to T_L - Ramp-up rate	< 3 °C/sec
Time maintained above : - Temperature (T_L) - Time (T_L)	217°C 60 ~ 260 sec
Peak temperature (T_p)	255 °C -0/+5°C
Time with 5°C of actual peak temperature (T_p)	10 ~30 sec
Ramp-down rate	< 6 °C/sec
Time 25°C to peak temperature	< 6 minutes