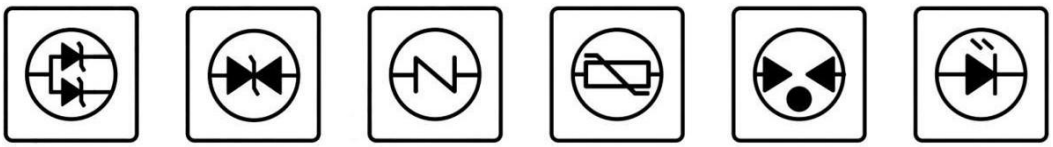
MSKSEMI 美森科
SEMICONDUCTOR



2SK3018T106(MS)

Product specification

2SK3018T106(MS)

Features

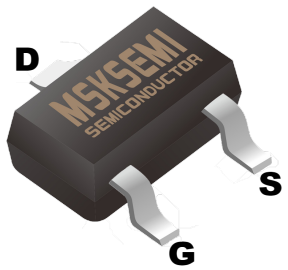
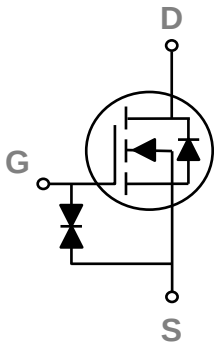
- *30V,300mA, RDS(ON) =1Ω@VGS = 10V*
- *Improved dv/dt capability*
- *Fast switching*
- *Green Device Available*

Application

- *Notebook*
- *Load Switch*
- *Hend-Held Instruments*

BVDSS	RDSON	ID
30V	1Ω	300mA

Reference News

PACKAGE OUTLINE	Pin Configuration	Marking
 SOT-323		KN

Absolute Maximum Ratings (TA=25℃ unless otherwise noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Drain Current – Continuous (T_A=25℃)	300	mA
	Drain Current – Continuous (T_A=70℃)	240	mA
I_{DM}	Drain Current – Pulsed[1]	1.2	A
P_D	Power Dissipation (T_C=25℃)	200	mW
	Power Dissipation – Derate above 25℃	2.5	mW/℃
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 125	℃

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction to ambient	---	400	℃/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Off Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	30	---	---	V
$\triangle BV_{DSS}/\triangle T_J$	BV_{DSS} Temperature Coefficient	Reference to 25℃ , I_D=1mA	---	0.05	---	V/℃
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V , V_{GS}=0V , T_J=50℃	---	---	100	nA
		V_{DS}=30V , V_{GS}=0V , T_J=85℃	---	---	400	nA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V , V_{DS}=0V	---	---	±6	uA

On Characteristics

$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=0.3A	---	1.0	3	Ω
		V_{GS}=4.5V , I_D=0.2A	---	1.3	4	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	0.8	1.1	1.6	V
$\triangle V_{GS(th)}$	$V_{GS(th)}$ Temperature Coefficient		---	3	---	mV/℃

Dynamic and switching Characteristics

C_{iss}	Input Capacitance	V_{DS}=30V , V_{GS}=0V , F=1MHz	---	23	46	pF
C_{oss}	Output Capacitance		---	16	32	
C_{rss}	Reverse Transfer Capacitance		---	10	20	

Drain-Source Diode Characteristics and Maximum Ratings

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	300	mA
I_{SM}	Pulsed Source Current		---	---	600	mA
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=0.2A , T_J=25℃	---	---	1.2	V

Note :
1. Repetitive Rating : Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
3. Essentially independent of operating temperature.

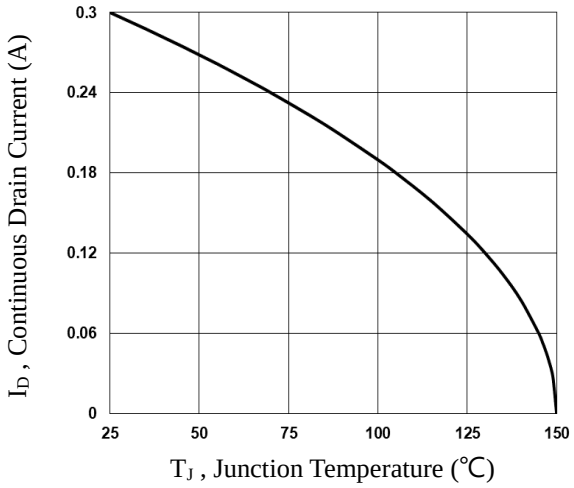


Fig.1 Continuous Drain Current vs. T_C

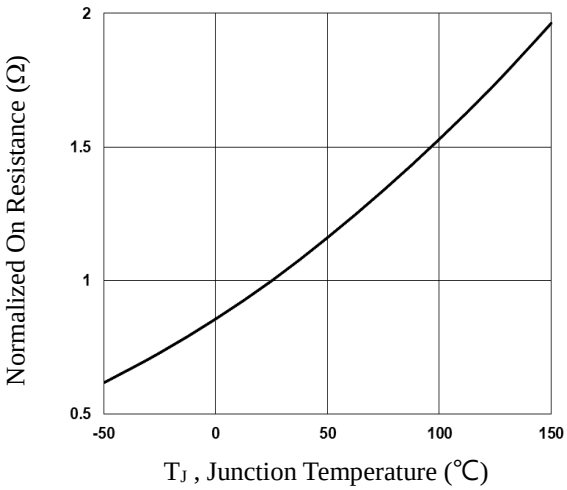


Fig.2 Normalized RDSON vs. T_J

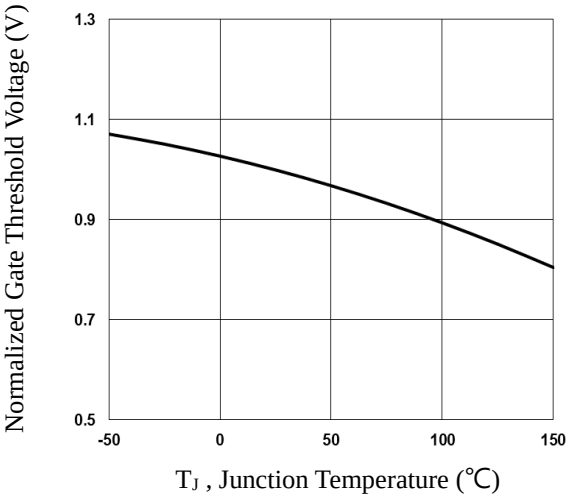


Fig.3 Normalized V_{th} vs. T_J

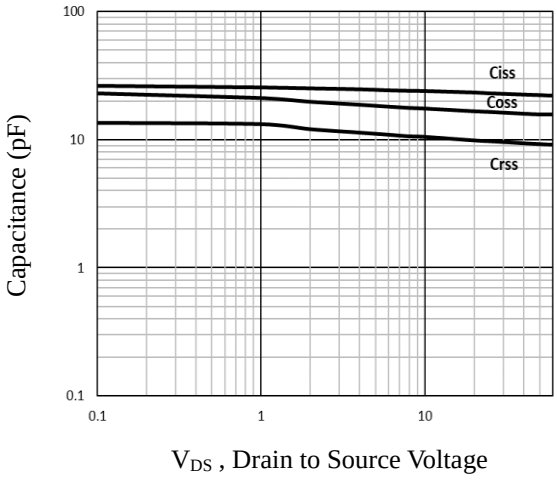


Fig.4 Capacitance Characteristics

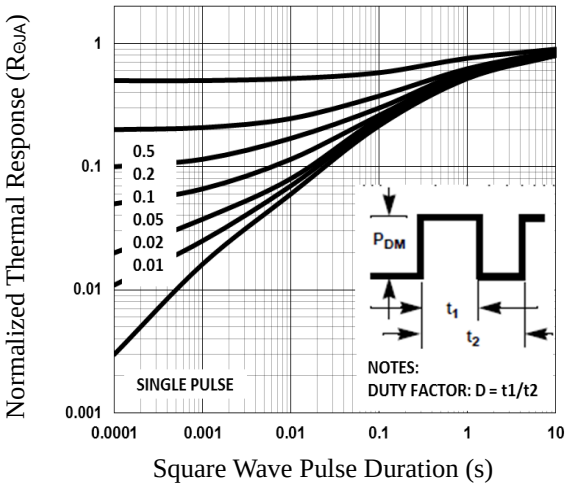


Fig.5 Normalized Transient Response

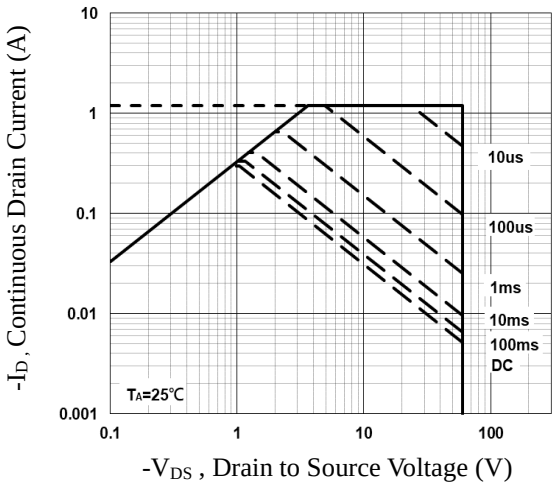


Fig.6 Maximum Safe Operation Area

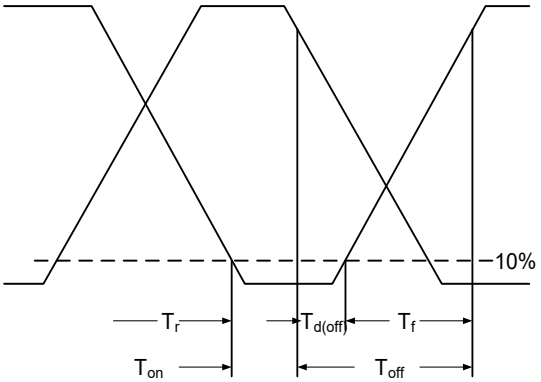


Fig.7 Switching Time Waveform

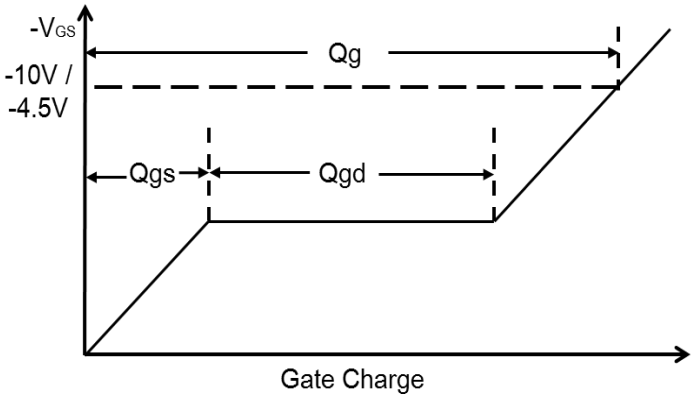
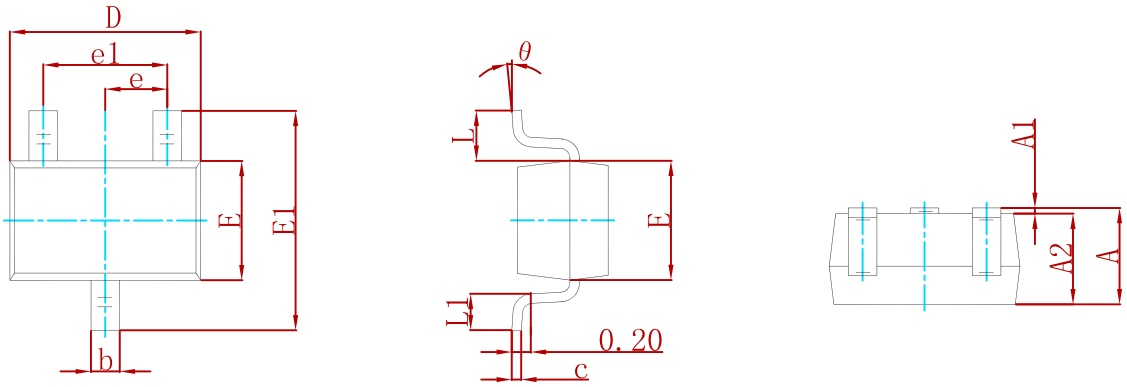


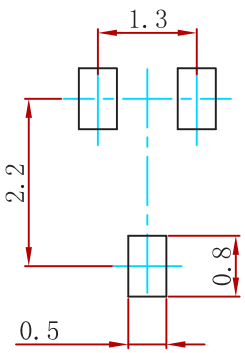
Fig.8 Gate Charge Waveform

PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



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

REEL SPECIFICATION

P/N	PKG	QTY
2SK3018T106(MS)	SOT-323	3000

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