

ESD protected N-Channel Enhancement Mode MOSFET

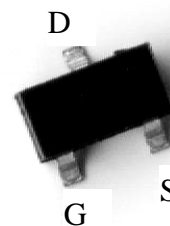
Description:

- Low voltage drive(2V drive) makes this device ideal for portable equipment.
- High speed switching
- ESD protected device
- Pb-free lead plating & halogen-free package

BV _{DSS}	30V
I _D	100mA
R _{DS(on)MAX}	8 Ω

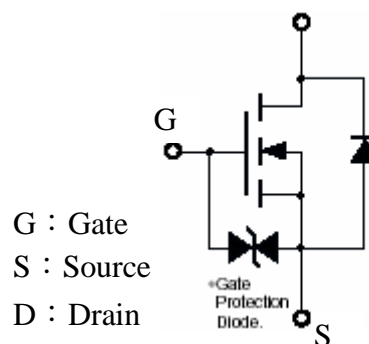
Outline

SOT-323



Symbol

2SK3018S3



Ordering Information

Device	Package	Shipping
2SK3018S3	SOT-323 (Pb-free lead plating & halogen-free package)	3000 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	BV _{DSS}	30	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current	Continuous	±100	mA
	Pulsed	±200 *1	mA
Reverse Drain Current	Continuous	±100	mA
	Pulsed	±200 *1	mA
Total Power Dissipation	P _D	200 *2	mW
ESD susceptibility		750 *3	V
Operating Junction and Storage Temperature Range	T _j ; T _{stg}	-55~+150	°C
Thermal Resistance, Junction-to-Ambient	R _{th,ja}	556	°C/W

Note : *1. Pulse Width ≤ 10μs, Duty cycle ≤ 1%

*2. With each pin mounted on the recommended lands.

*3. Human body model, 1.5kΩ in series with 100pF

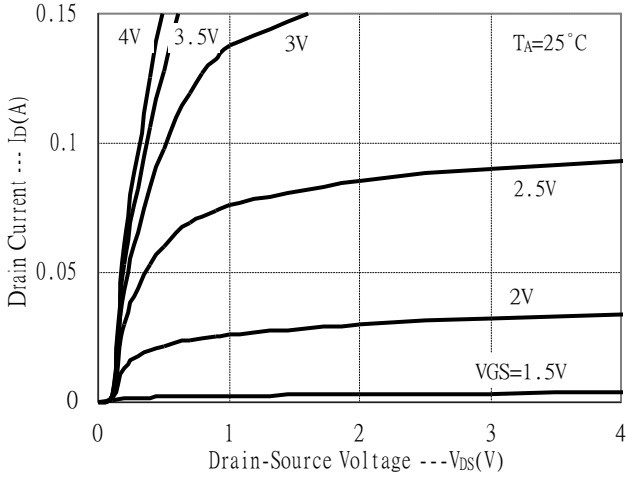
Electrical Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	30	-	-	V	V _{GS} =0, I _D =100μA
V _{GS(th)}	0.8	1.3	1.5	V	V _{DS} =3V, I _D =100μA
I _{GSS}	-	-	±1	μA	V _{GS} =±20V, V _{DS} =0
I _{DSS}	-	-	100	nA	V _{DS} =30V, V _{GS} =0
R _{DS(ON)}	-	3.4	8	∧	V _{GS} =4V, I _D =10mA
	-	5.7	13		V _{GS} =2.5V, I _D =10mA
	-	23	30		V _{GS} =2V, I _D =10mA
G _{FS}	20	50	-	mS	V _{DS} =3V, I _D =10mA
Dynamic					
C _{iss}	-	12.5	-	pF	V _{DS} =5V, V _{GS} =0, f=1MHz
C _{oss}	-	7.3	-		
C _{rss}	-	3.5	-		
t _{d(on)}	-	15	-	ns	V _{DD} ≐ 5V, I _D =10mA, V _{GS} =5V, R _L =500Ω, R _G =10Ω
t _r	-	35	-		
t _{d(off)}	-	75	-		
t _f	-	75	-		
Source-Drain Diode					
*V _{SD}	-	0.88	1.2	V	V _{GS} =0V, I _S =100mA

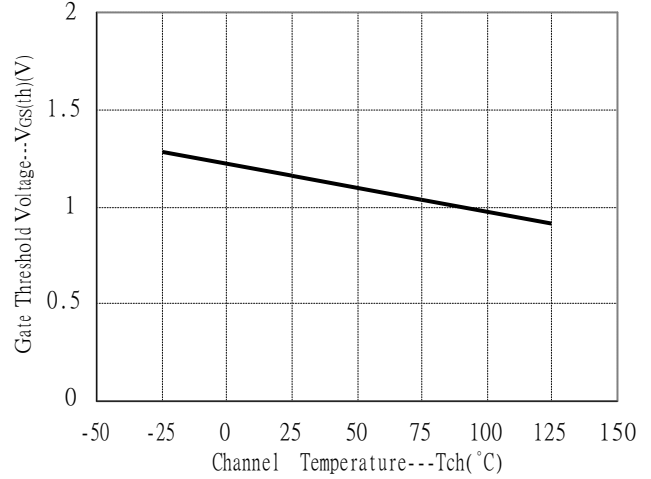
*Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

Typical Characteristics

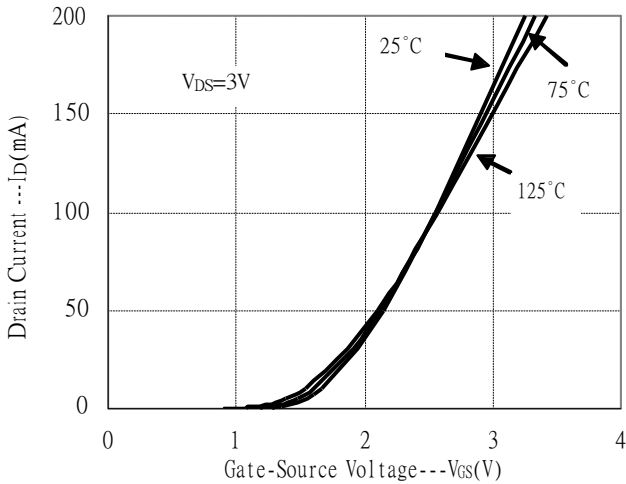
Typical Output Characteristics



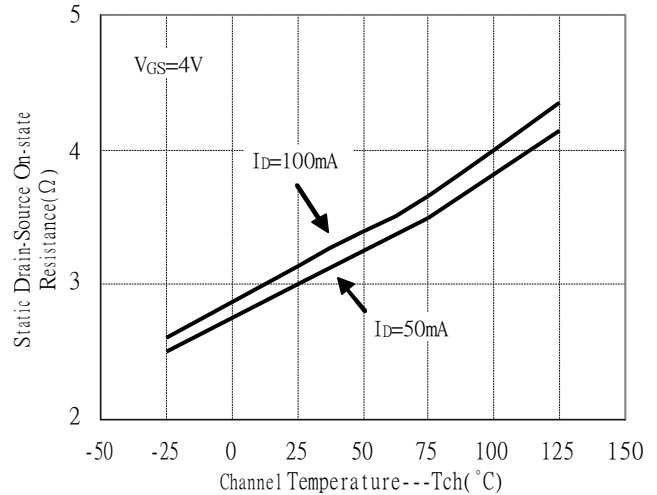
Gate Threshold Voltage vs Channel Temperature



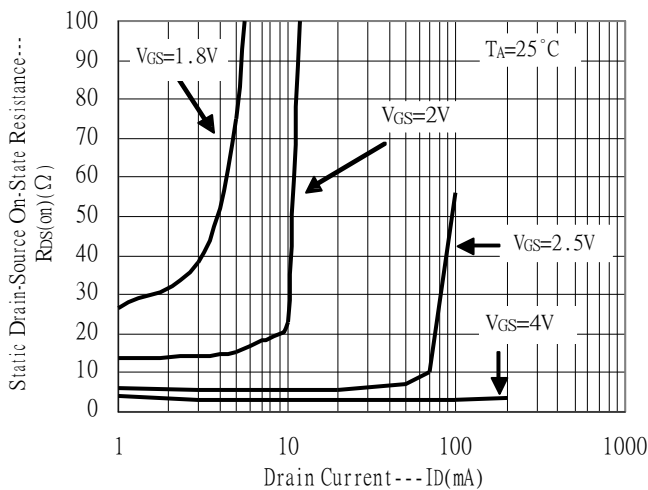
Typical Transfer Characteristics



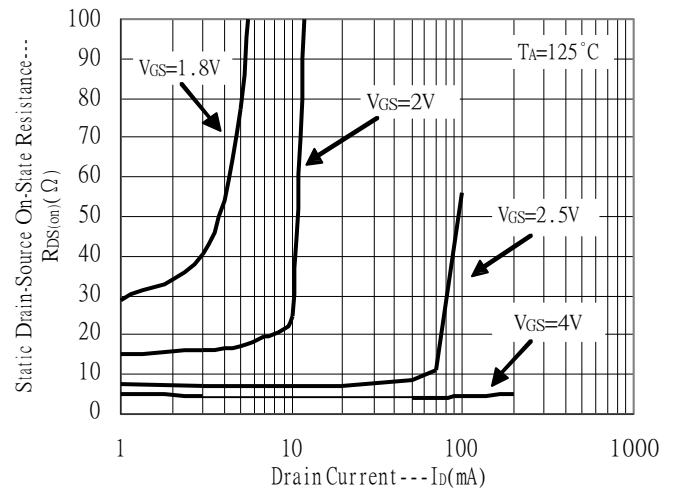
Static Drain-Source On-state Resistance with Temperature



Static Drain-Source On-State resistance vs Drain Current

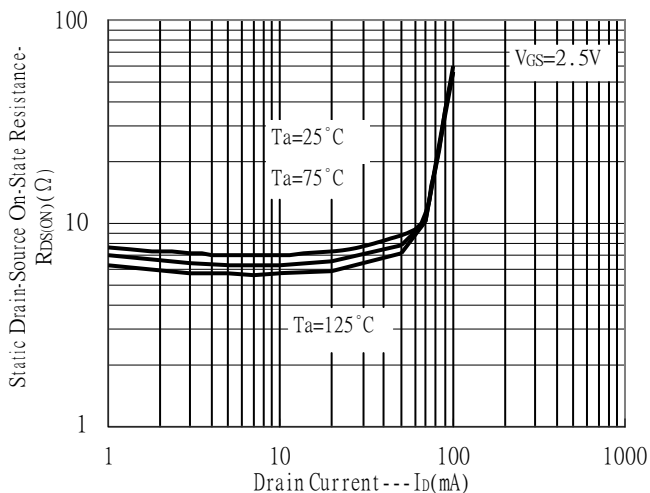


Static Drain-Source On-State resistance vs Drain Current

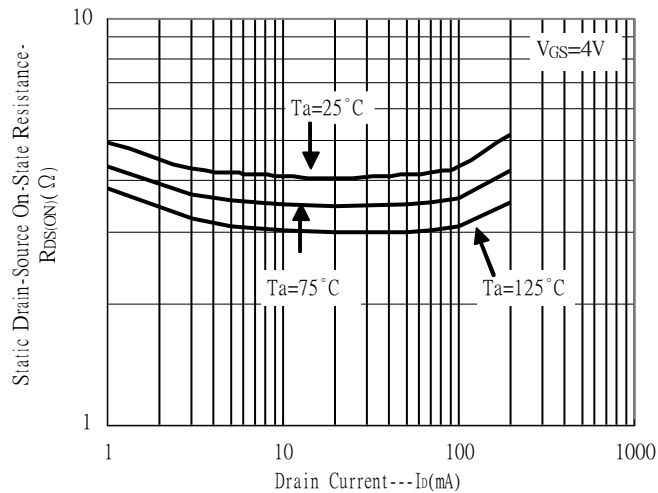


Typical Characteristics(Cont.)

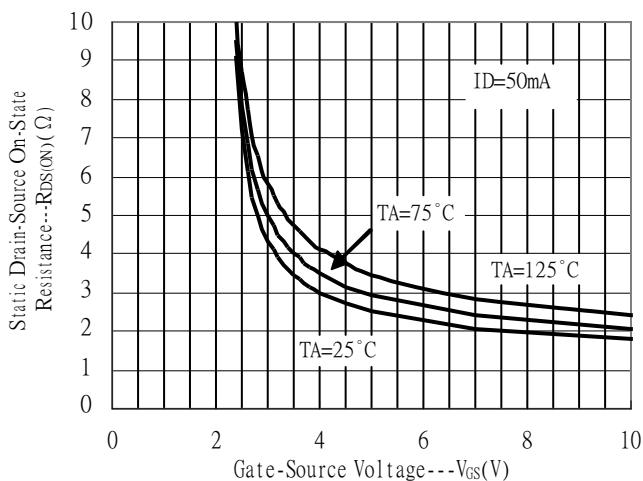
Static Drain-Source On-State Resistance vs Drain Current



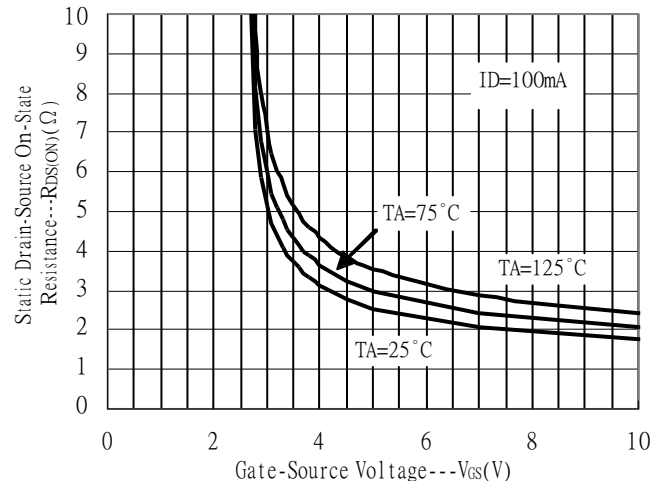
Static Drain-Source On-State Resistance vs Drain Current



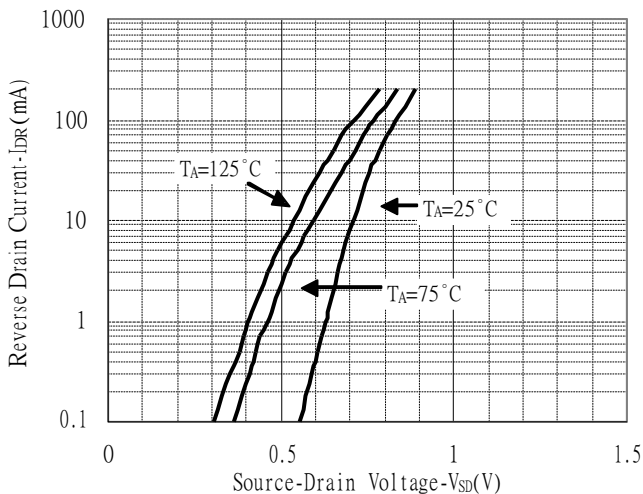
Static Drain-Source On-State Resistance vs Gate-Source Voltage



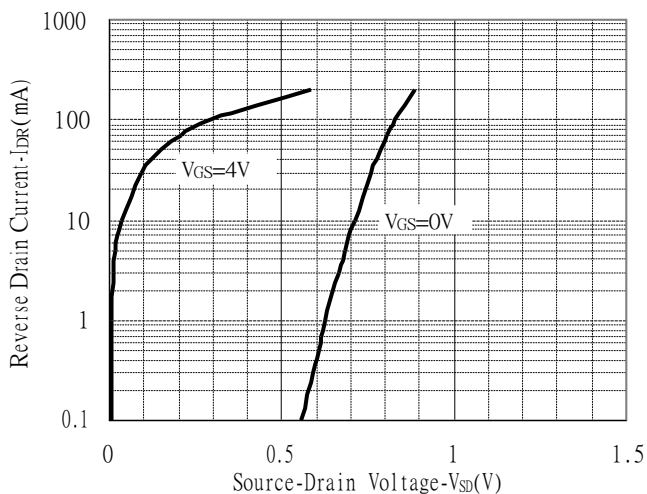
Static Drain-Source On-State Resistance vs Gate-Source Voltage



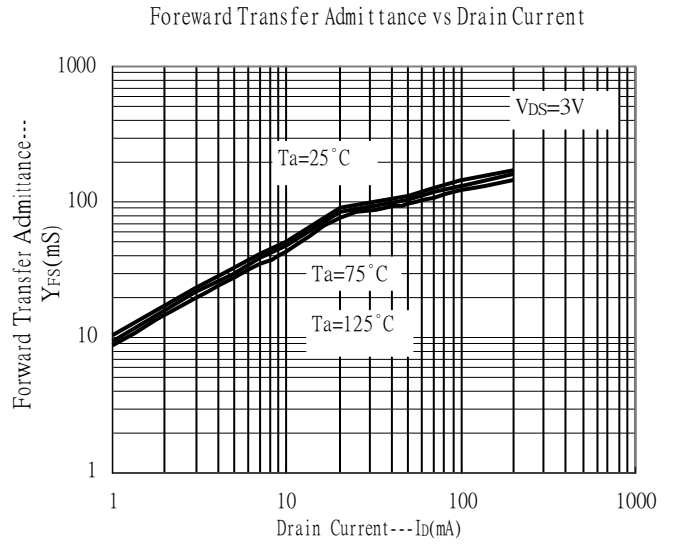
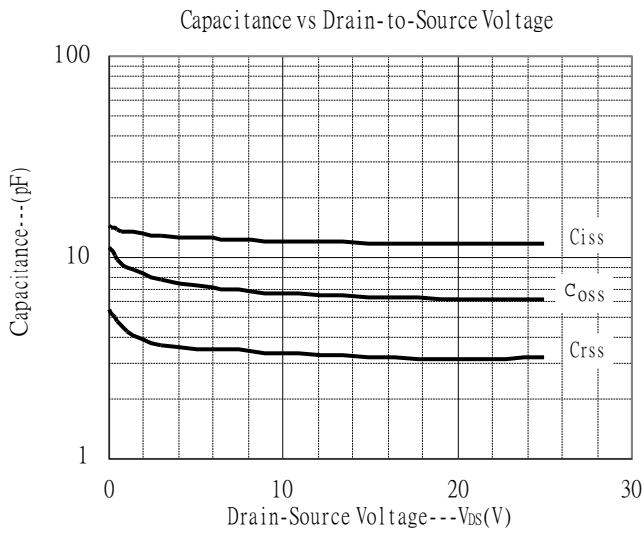
Reverse Drain Current vs Source-Drain Voltage (I)



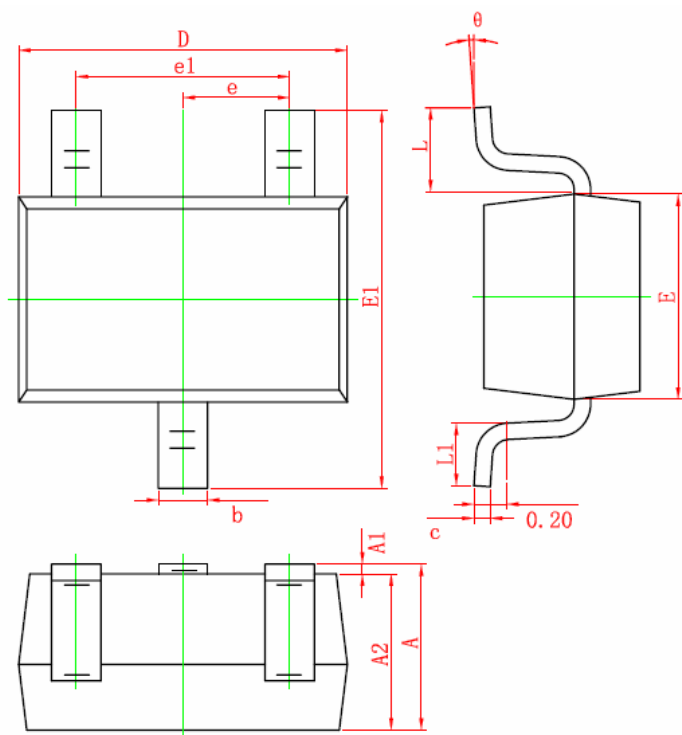
Reverse Drain Current vs Source-Drain Voltage (II)



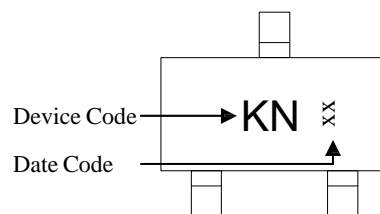
Typical Characteristics(Cont.)



SOT-323 Dimension



Marking:



3-Lead SOT-323 Plastic Surface Mounted Package Code: S3

Style: Pin 1.Gate 2.Source 3.Drain

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