SK2328N3

100V N-Channel Enhancement Mode MOSFET

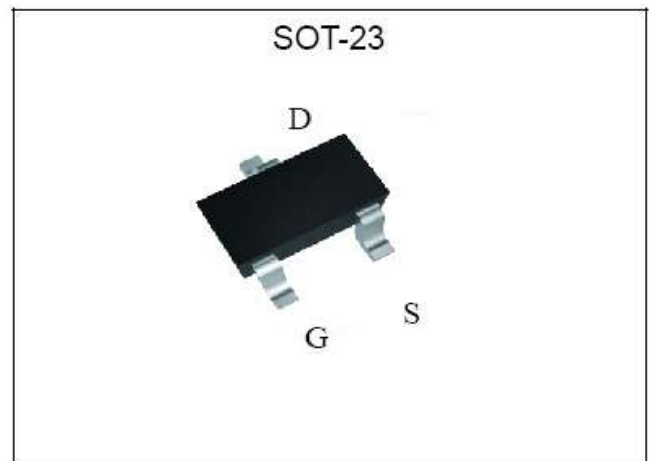|	
BV_{DSS}	100V
I_D	1.9A
$R_{DSON(TYP)}$	125mΩ

Features

- V_{DS}=100V
  $R_{DS(ON)(typ)}$=125mΩ@V_{GS}=10V, I_D=1.5A
- Low on-resistance
- Low gate charge
- Excellent thermal and electrical capabilities
- Pb-free lead plating and halogen-free package

Equivalent Circuit

SK2328N3

G : Gate
S : Source
D : Drain
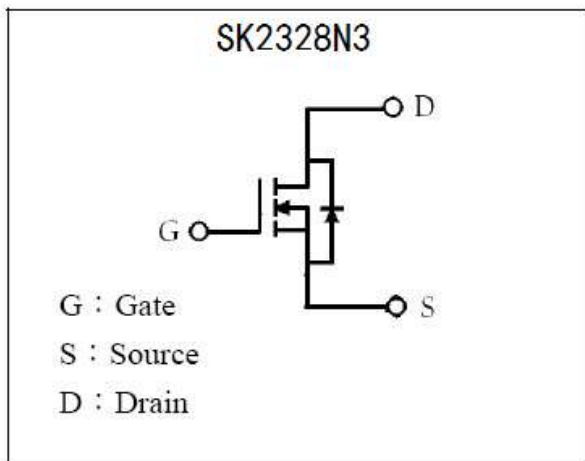
Outline

SOT-23

Ordering Information

Device	Package	Shipping
SK2328N3	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current @ T_A=25°C (Note 3)	I_D	1.9	A
Continuous Drain Current @ T_A=70°C (Note 3)	I_D	1.5	A
Pulsed Drain Current (Note 1, 2)	I_{DM}	10	A
Maximum Power Dissipation @ T_A=25°C	P_D	1.38	W
Linear Derating Factor		0.01	W/°C
Thermal Resistance, Junction-to-Ambient (Note 3)	$R_{th,ja}$	90	°C/W
Operating Junction and Storage Temperature	Tj, Tstg	-55~+150	°C

Note : 1. Pulse width limited by maximum junction temperature.
2. Pulse width≤ 300µs, duty cycle≤2%.

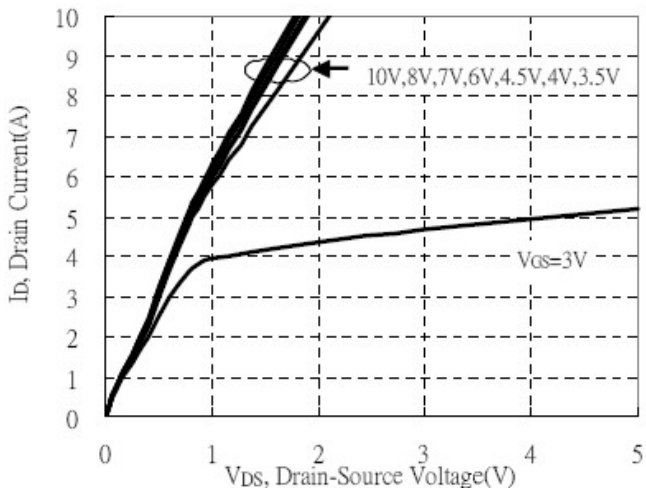## Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	100	-	-	V	V_{GS}=0, I_D=250µA
$V_{GS(th)}$	1	1.9	2.5		V_{DS}=V_{GS}, I_D=250µA
G_{FS}	-	4	-	S	V_{DS}=15V, I_D=1.5A
I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0
I_{DSS}	-	-	1	µA	V_{DS}=80V, V_{GS}=0
	-	-	10		V_{DS}=80V, V_{GS}=0, Tj=55°C
*$R_{DS(ON)}$	-	125	180	mΩ	V_{GS}=10V, I_D=1.5A
Dynamic					
Ciss	-	1188	-	pF	V_{DS}=25V, V_{GS}=0, f=1MHz
Coss	-	30	-		
Crss	-	20	-		
*$t_{d(ON)}$	-	12	-	ns	V_{DS}=50V, I_D=1A, V_{GS}=10V, R_G=6Ω
*t_r	-	9.6	-		
*$t_{d(OFF)}$	-	29	-		
*t_f	-	5	-		
*Qg	-	14	-	nC	V_{DS}=80V, I_D=1.9A, V_{GS}=5V
*Qgs	-	4	-		
*Qgd	-	2.3	-		
Source-Drain Diode					
*V_{SD}	-	0.75	1.2	V	V_{GS}=0V, Is=1A

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

Typical Characteristics

Typical Output Characteristics
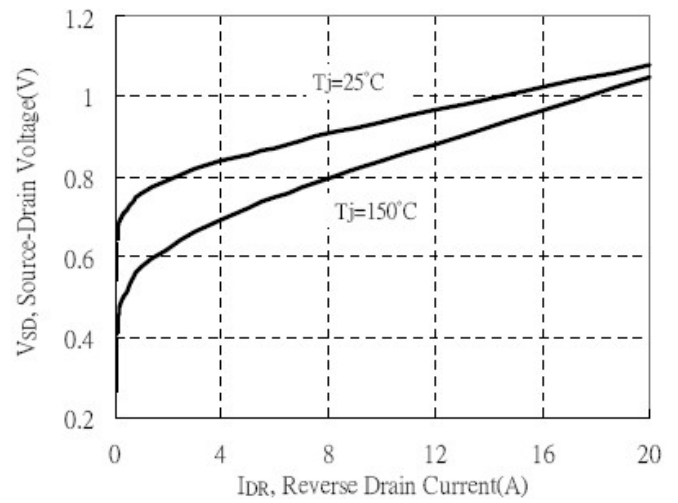

ID, Drain Current(A) vs VDS, Drain-Source Voltage(V)

10V,8V,7V,6V,4.5V,4V,3.5V

VGS=3V

Brekdown Voltage vs Ambient Temperature

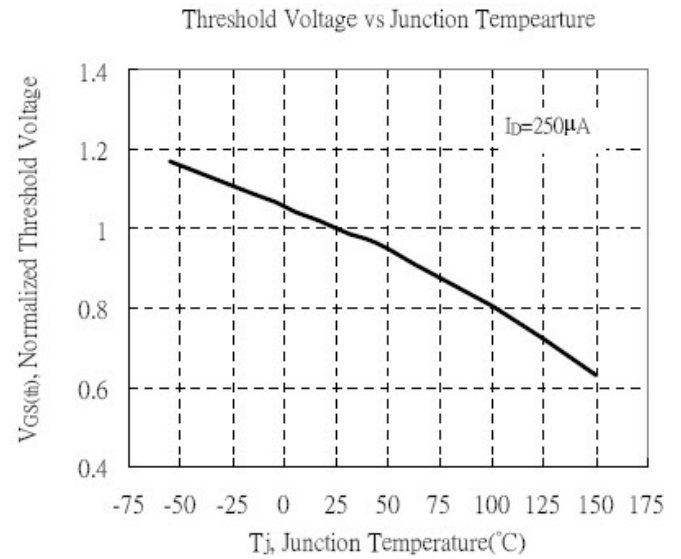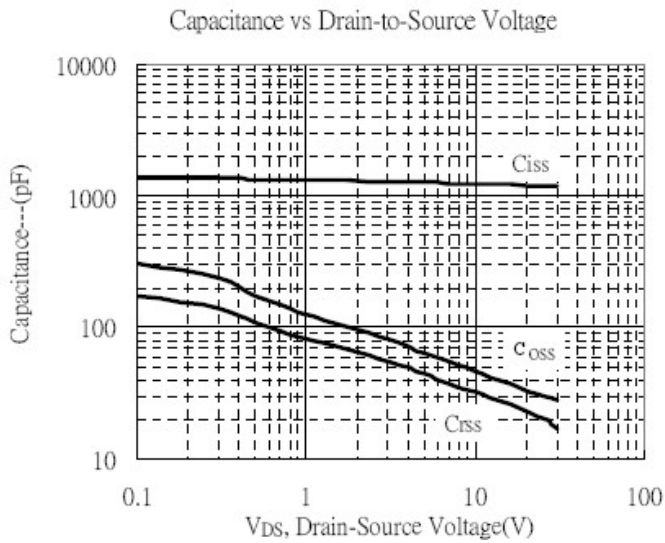BVDSS, Normalized Drain-Source Breakdown Voltage vs Tj, Junction Temperature(°C)
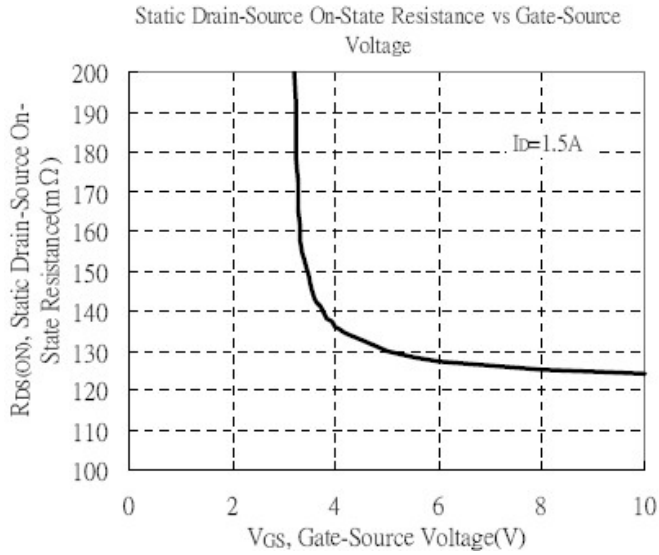
I_D=250μA, V_{GS}=0V
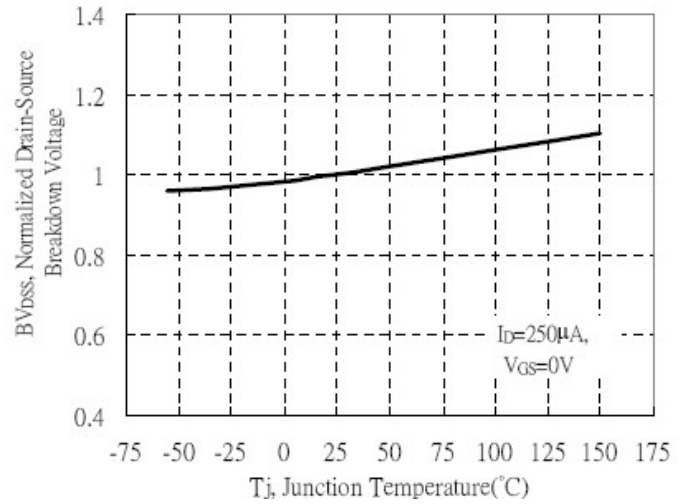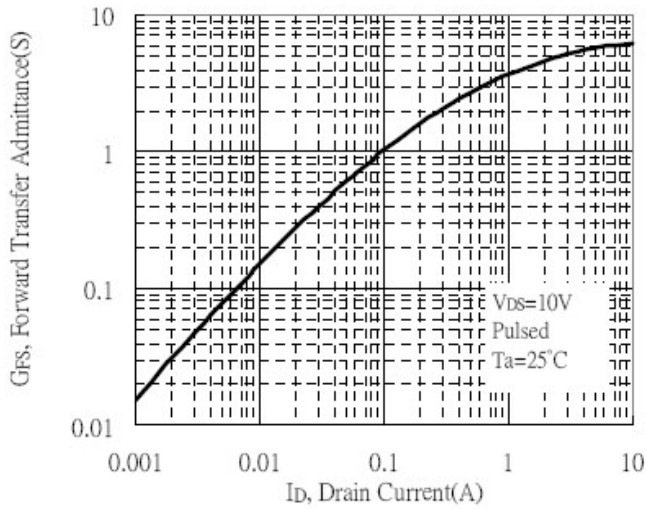
Static Drain-Source On-State resistance vs Drain Current

RDS(ON), Static Drain-Source On-State Resistance(mΩ) vs ID, Drain Current(A)

V_{GS}=2.5V
V_{GS}=3V
V_{GS}=4.5V
V_{GS}=10V
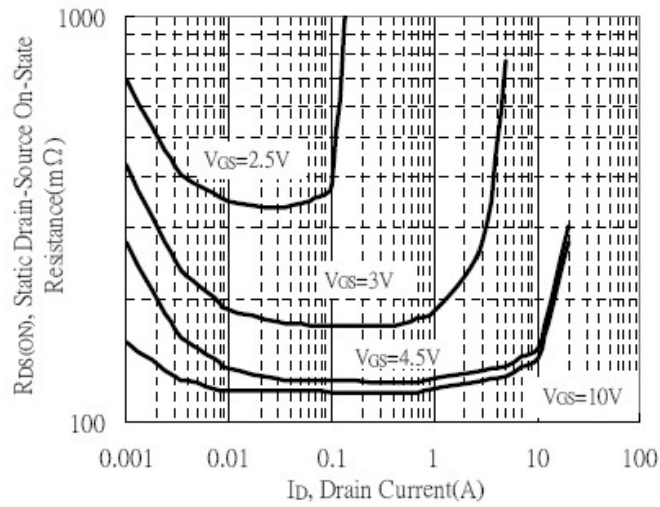
Reverse Drain Current vs Source-Drain Voltage

VSD, Source-Drain Voltage(V) vs IDR, Reverse Drain Current(A)

Tj=25°C
Tj=150°C

Typical Characteristics (Cont.)

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

Drain-Source On-State Resistance vs Junction Tempearture

Capacitance vs Drain-to-Source Voltage

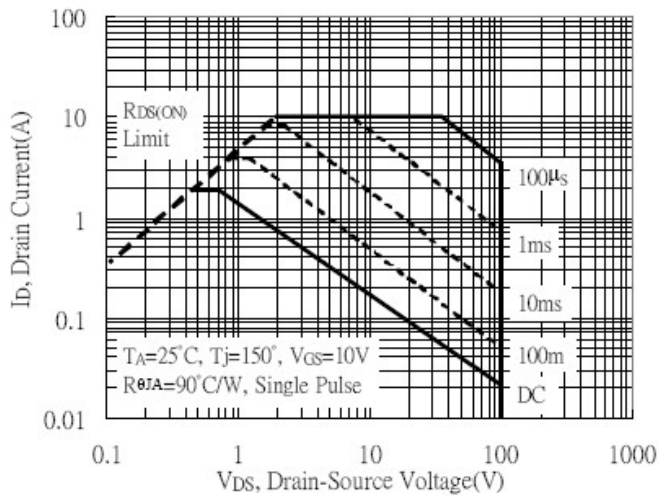Threshold Voltage vs Junction Tempearture
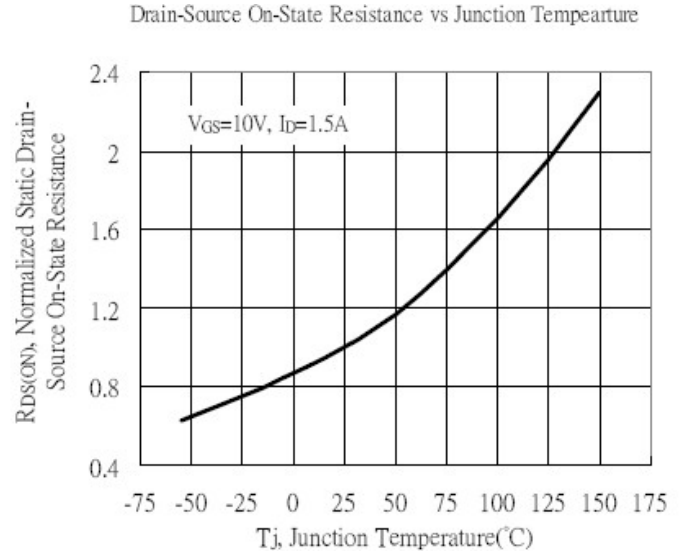
Forward Transfer Admittance vs Drain Current

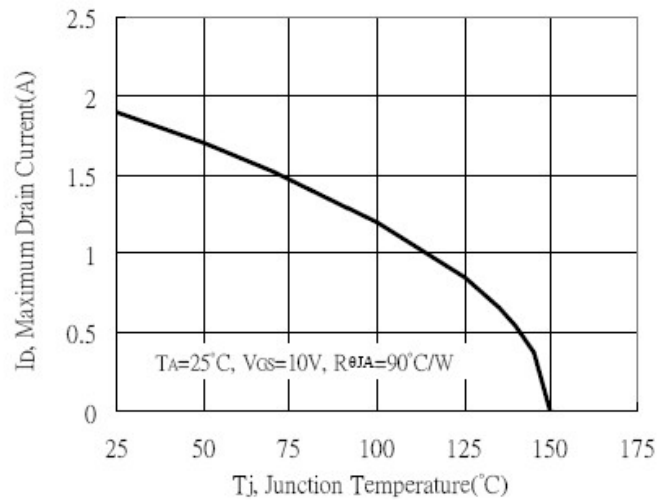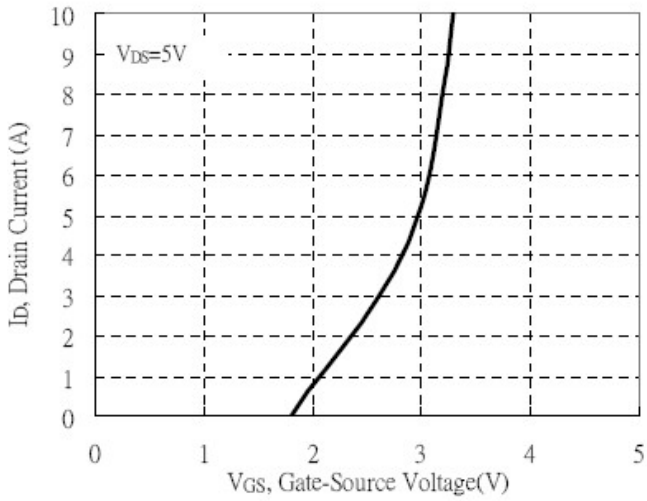## Gate Charge Characteristics
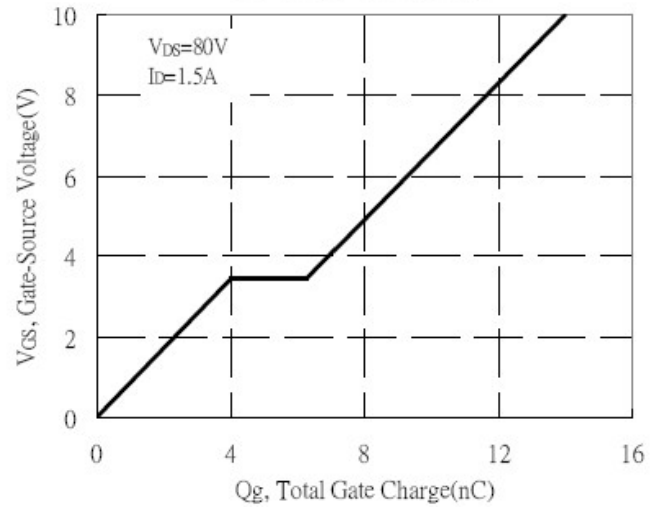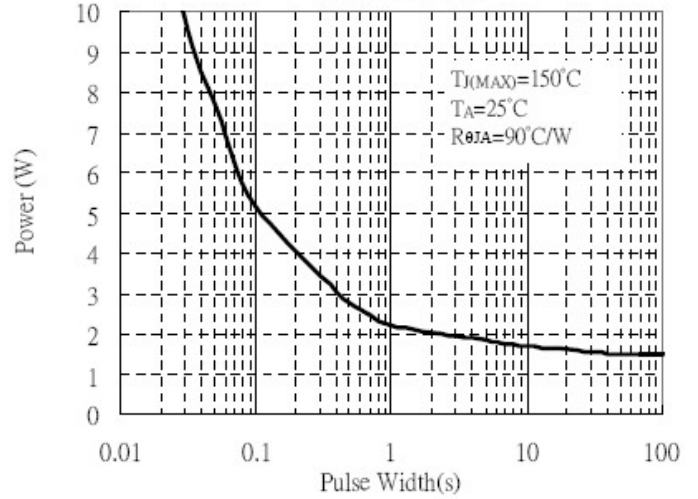

Maximum Safe Operating Area

Maximum Drain Current vs Junction Temperature

Typical Transfer Characteristics

V_DS=5V

Single Pulse Power Rating, Junction to Ambient
(Note on page 2)

$T_{J(MAX)}=150°C$
$T_A=25°C$
$R_{θJA}=90°C/W$

Recommended Soldering Footprint

$\frac{0.95}{0.037}$

$\frac{0.95}{0.037}$

$\frac{2.0}{0.079}$

$\frac{0.9}{0.035}$

$\frac{0.8}{0.031}$

Unit : $\frac{mm}{inches}$