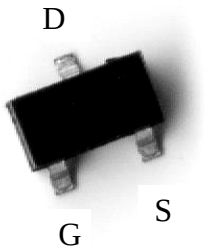
P-Channel Enhancement Mode MOSFET

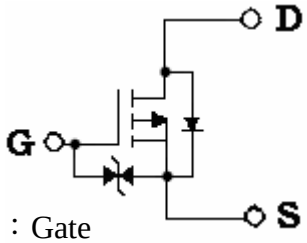
SOT-23



Features:

- Advanced trench process technology
- High density cell design for ultra low on resistance
- Low gate charge
- Compact and low profile SOT-23 package
- Pb-free & Halogen-free package

BV_{DSS}	**-30V**
I_D	**-3.3A**
$R_{DS(ON)}$@V_{GS}=-10V, I_D=-2.5A	**63mΩ(typ)**
$R_{DS(ON)}$@V_{GS}=-4.5V, I_D=-1.35A	**100mΩ(typ)**
$R_{DS(ON)}$@V_{GS}=-4V, I_D=-1.35A	**114mΩ(typ)**



G：Gate
S：Source
D：Drain

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current @V_{GS}=-10V, T_A=25°C (Note 1)	I_D	-3.3	A
Continuous Drain Current @V_{GS}=-10V, T_A=70°C (Note 1)	I_D	-2.6	A
Pulsed Drain Current (Note 2)	I_{DM}	-15	A
Maximum Power Dissipation	P_D	1.25	W
Linear Derating Factor		0.01	W/°C
Operating Junction and Storage Temperature	Tj, Tstg	-55~+150	°C

Note : 1. Surface mounted on 1 in² copper pad of FR-4 board, t≤10s; 270°C/W when mounted on minimum copper pad.
2. Pulse width limited by maximum junction temperature.

Thermal Performance

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient	Rth,ja	100	°C/W

Note : Surface mounted on 1 in² copper pad of FR-4 board, t≤10s; 270°C/W when mounted on minimum copper pad.

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-30	-	-	V	I_D=-1mA , V_{GS}=0V
BV_{DSX}	-15	-	-		I_D=-1mA, V_{GS}=20V
$V_{GS(th)}$	-1	-1.7	-2		V_{DS}=V_{GS}, I_D=-250μA
I_{GSS}	-	-	±10	μA	V_{GS}=±20V, V_{DS}=0
I_{DSS}	-	-	-1		V_{DS}=-30V, V_{GS}=0
	-	-	-5		V_{DS}=-30V, V_{GS}=0, Tj=55°C
*$R_{DS(ON)}$	-	63	80	mΩ	I_D=-2.5A, V_{GS}=-10V
	-	100	130		I_D=-1.35A, V_{GS}=-4.5V
	-	114	150		I_D=-1.35A, V_{GS}=-4V
*G_{FS}	-	3.4	-	S	V_{DS}=-5V, I_D=-1.35A
Dynamic					
Ciss	-	550	-	pF	V_{DS}=-15V, V_{GS}=0, f=1MHz
Coss	-	86	-		
Crss	-	63	-		
*$t_{d(ON)}$	-	10	-	ns	V_{DS}=-15V, V_{GS}=-4.5V, I_D=-1A, R_G=10Ω
*t_r	-	16	-		
*$t_{d(OFF)}$	-	20	-		
*t_f	-	10	-		
*Qg	-	7.6	-	nC	V_{DS}=-15V, I_D=-3.3A, V_{GS}=-4.5V
*Qgs	-	1.8	-		
*Qgd	-	2.8	-		
Source-Drain Diode					
*I_S	-	-	-3.3	A	
*V_{SD}	-	-0.76	-1.0	V	V_{GS}=0V, I_{SD}=-1A

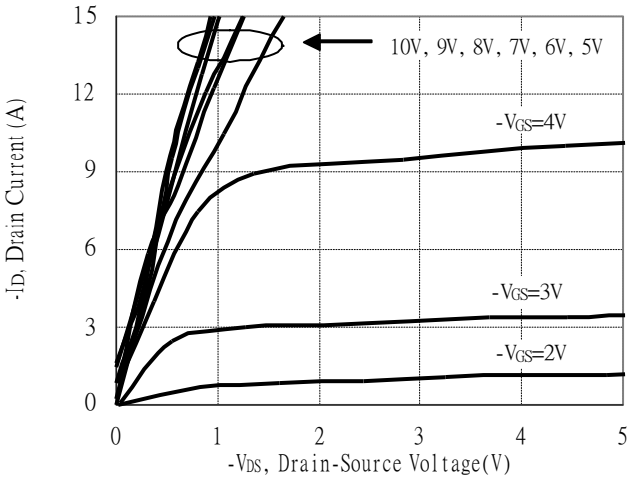
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Ordering Information

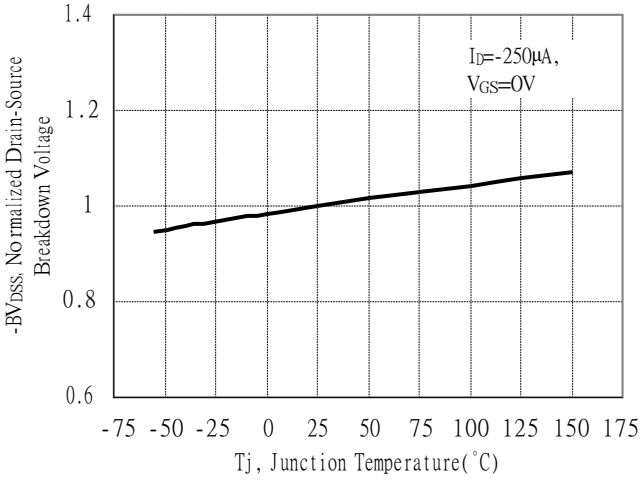
Device	Package	Shipping	Marking
KTP3403KN3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	K3403

Typical Characteristics

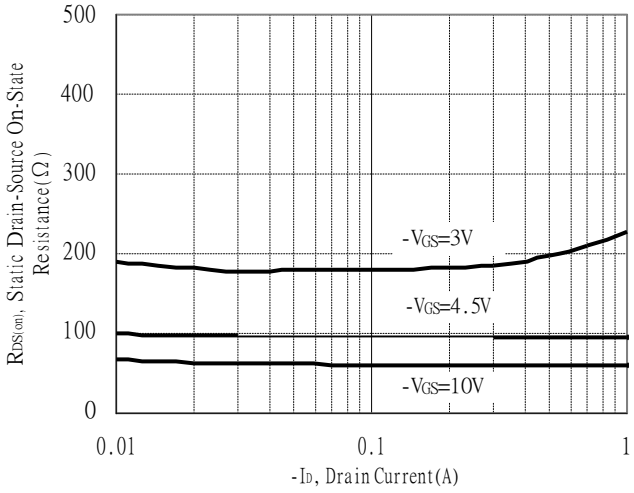
Typical Output Characteristics



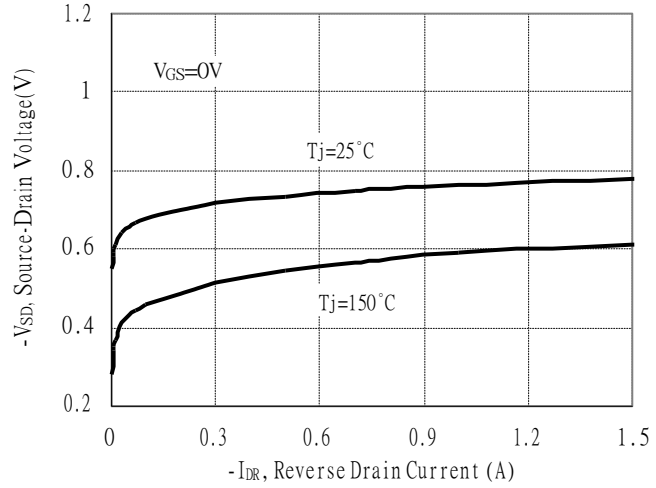
Brekdown Voltage vs Ambient Temperature



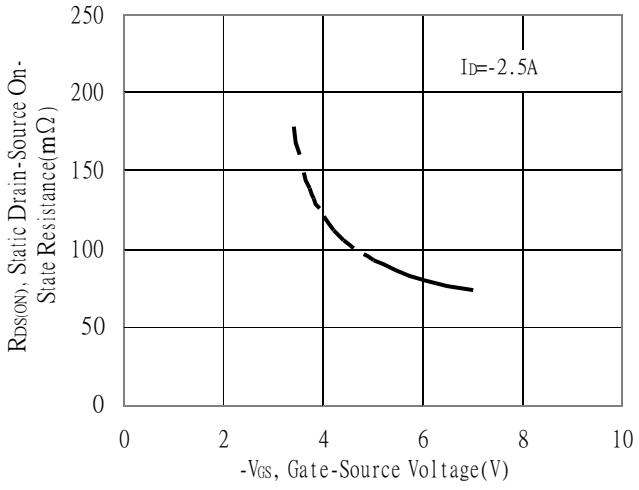
Static Drain-Source On-State resistance vs Drain Current



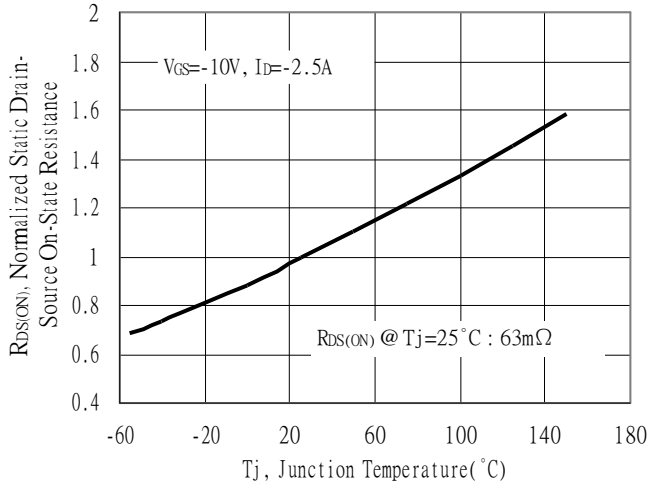
Reverse Drain Current vs Source-Drain Voltage



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

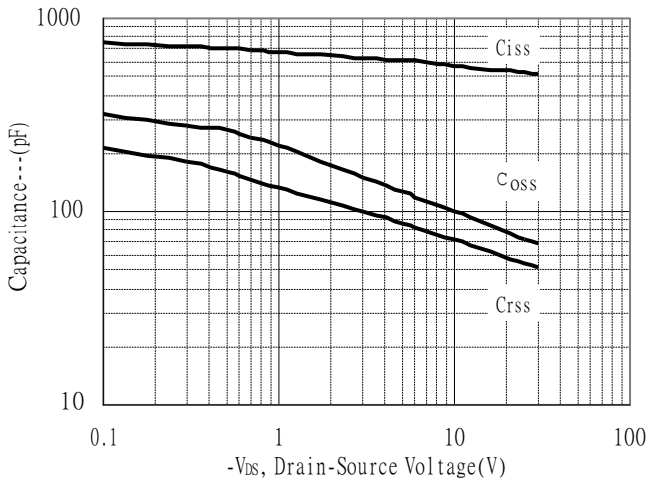


Drain-Source On-State Resistance vs Junction Tempearture

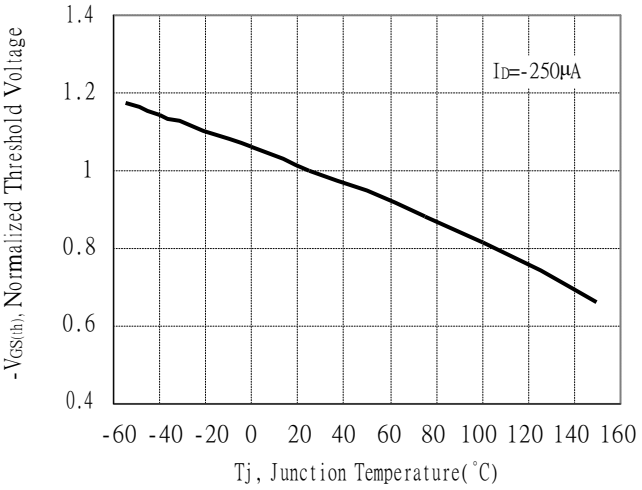


Typical Characteristics(Cont.)

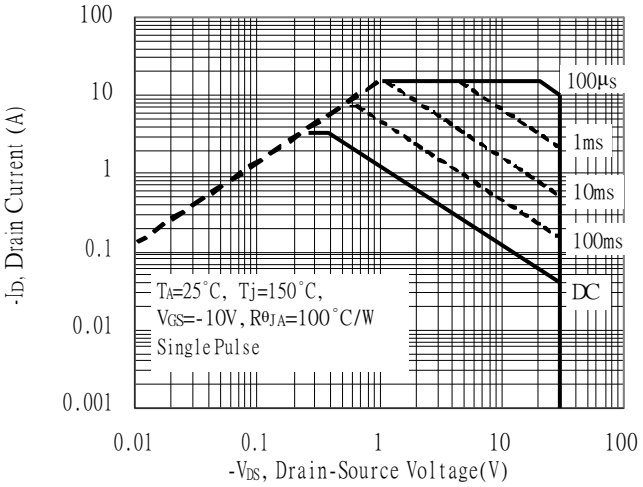
Capacitance vs Drain-to-Source Voltage



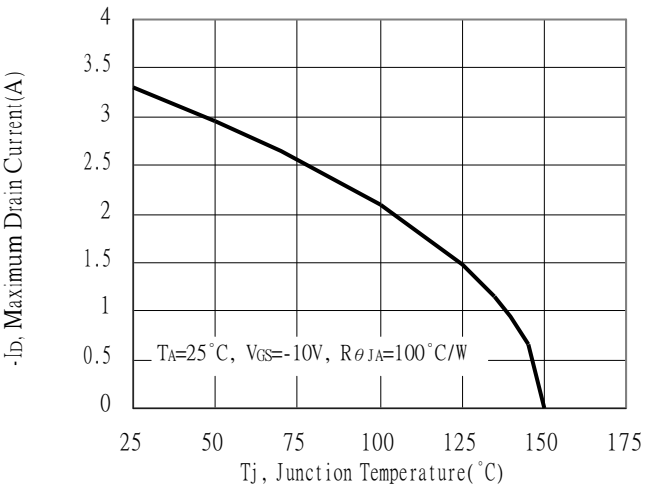
Threshold Voltage vs Junction Tempearture



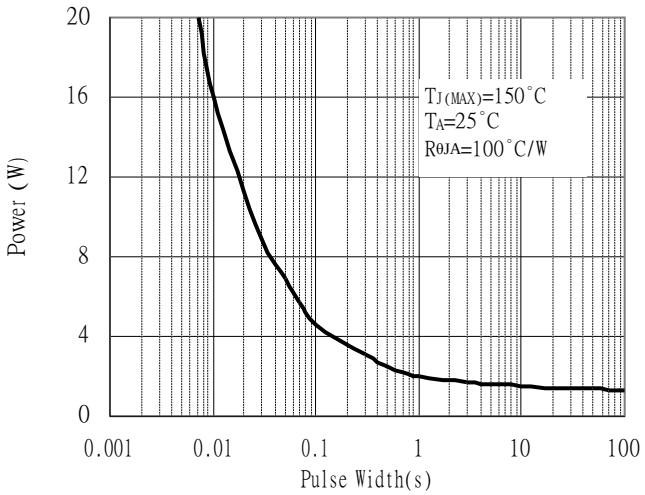
Maximum Safe Operating Area



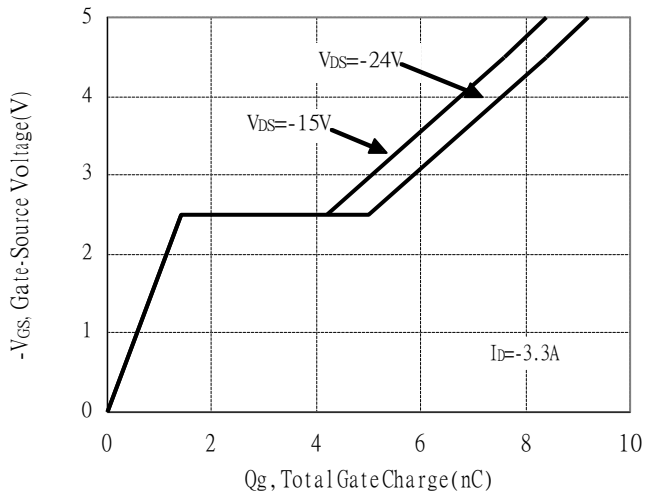
Maximum Drain Current vs JunctionTemperature



Single Pulse Power Rating, Junction to Ambient

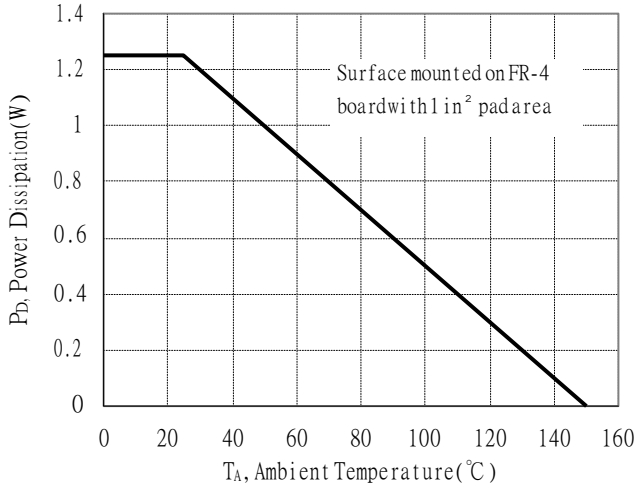


Gate Charge Characteristics

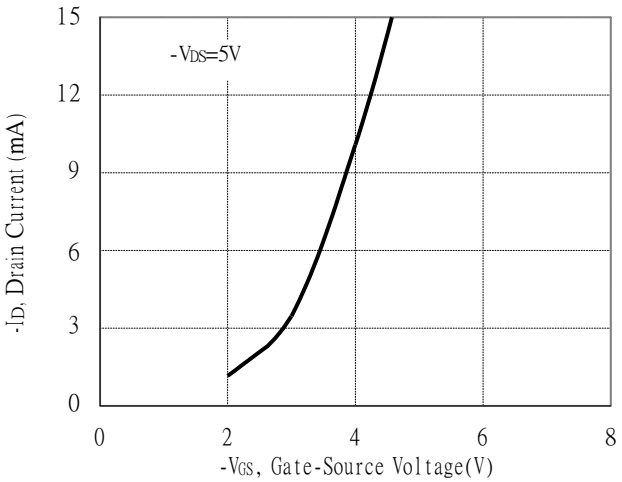


Typical Characteristics(Cont.)

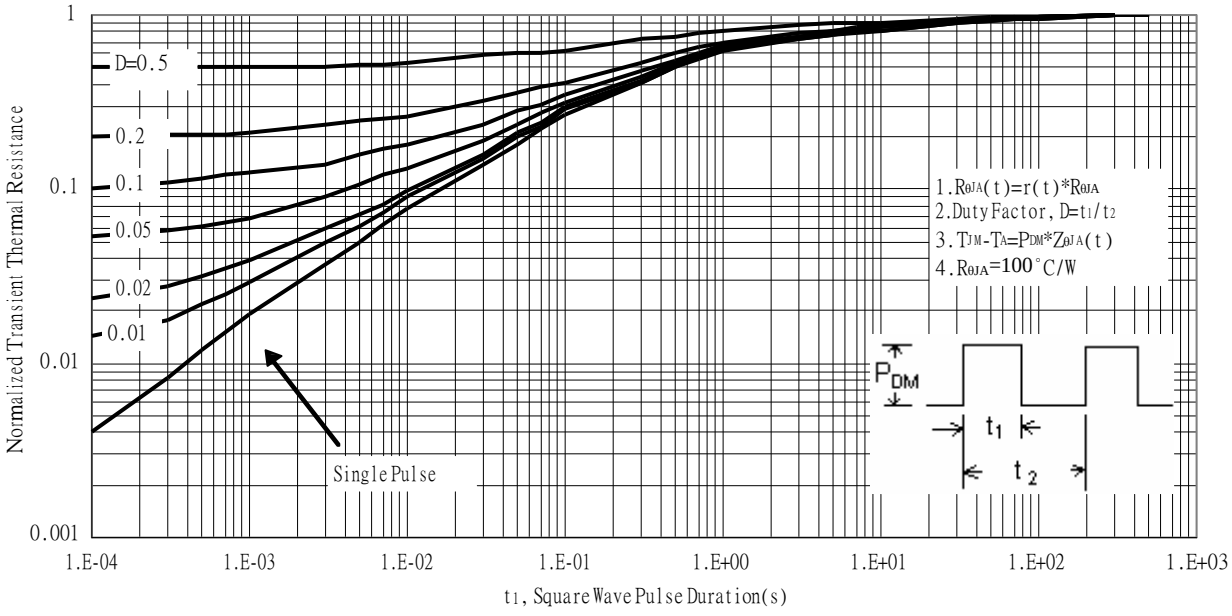
Power Derating Curve



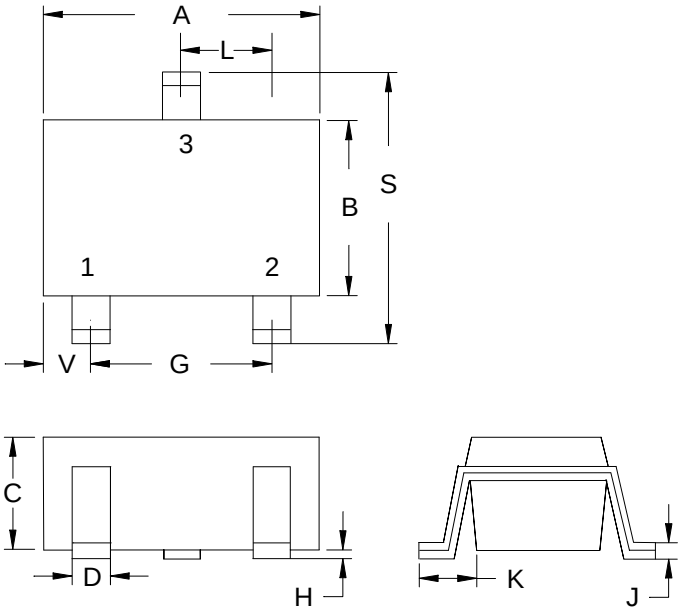
Typical Transfer Characteristics



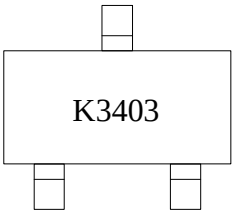
Transient Thermal Response Curves



SOT-23 Dimension



Marking:



3-Lead SOT-23 Plastic
Surface Mounted Package
Code: N3

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

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1161	2.10	2.95
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					