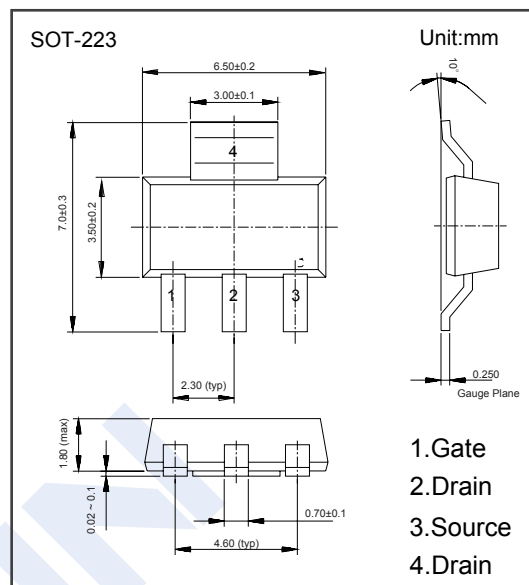
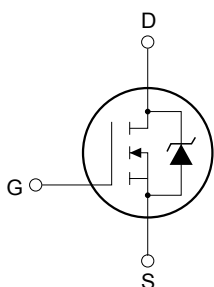


N-Channel MOSFET

STN2NF10 (KTN2NF10)

■ Features

- $V_{DS} (V) = 100V$
- $I_D = 2.4 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 260m\Omega$ ($V_{GS} = 10V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	2.4	A
		1.5	
Pulsed Drain Current	I_{DM}	17	
Power Dissipation	P_D	3.3	W
Single pulse avalanche energy (Note.1)	E_{AS}	200	mJ
Peak diode recovery voltage slope (Note.2)	dv/dt	30	V/ns
Thermal Resistance.Junction- to-Ambient	R_{thJA}	38	$^\circ C/W$
		62.5	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: $I_{AS} = 2.4A$, $V_{DD} = 30V$, $R_g = 4.7\Omega$, starting $T_J = 25^\circ C$

Note.2: $I_{SD} < 6A$, $di/dt < 500A/\mu s$, $V_{DD} = 80\% V_{(BR)DSS}$

N-Channel MOSFET

STN2NF10 (KTN2NF10)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
		V _{DS} =100V, V _{GS} =0V, T _C =125°C			10	
		V _{DS} =30V, V _{GS} =0V, T _C =125°C			1	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	2		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =1.2A		230	260	mΩ
Forward Transconductance	g _{FS}	V _{DS} =15V, I _D =1.2A		2.5		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		280		pF
Output Capacitance	C _{oss}			45		
Reverse Transfer Capacitance	C _{rss}			20		
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =80V, I _D =6A		10	14	nC
Gate Source Charge	Q _{gs}			2.5		
Gate Drain Charge	Q _{gd}			4		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =50V, I _D =2.4A, R _G =4.7 Ω		6		ns
Turn-On Rise Time	t _r			10		
Turn-Off DelayTime	t _{d(off)}			20		
Turn-Off Fall Time	t _f			3		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 6A, V _{DD} =10V, dI/dt= 100A/μs		70		nC
Body Diode Reverse Recovery Charge	Q _{rr}			175		
Reverse recovery current	I _{RRM}			5		
Maximum Body-Diode Continuous Current	I _S				2.4	A
Source-drain current (pulsed)	I _{SM}				17	
Diode Forward Voltage (Note.1)	V _{SD}	I _S =2.4A, V _{GS} =0V			1.2	V

Note.1: Pulsed: pulse duration = 300μs, duty cycle 1.5%

■ Marking

Marking	N2NF10
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N-Channel MOSFET

STN2NF10 (KTN2NF10)

■ Typical Characteristics

Figure 1. Safe operating area

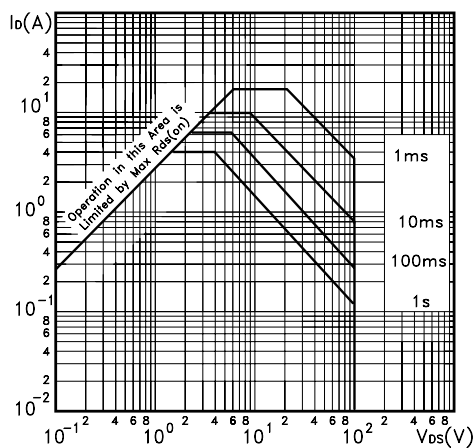


Figure 2. Thermal impedance

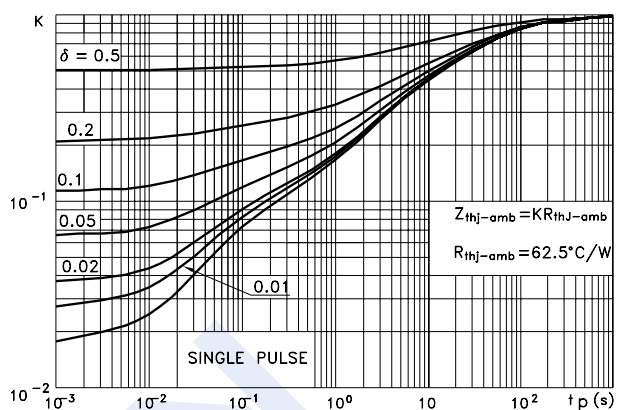


Figure 3. Output characteristics

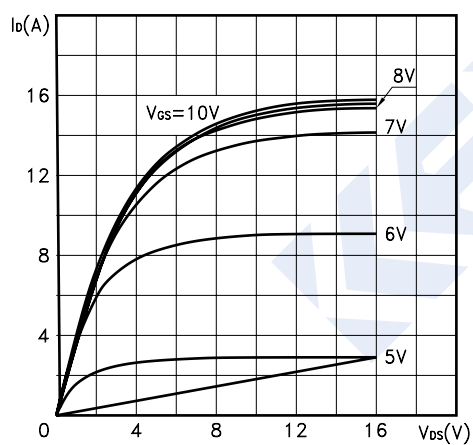


Figure 4. Transfer characteristics

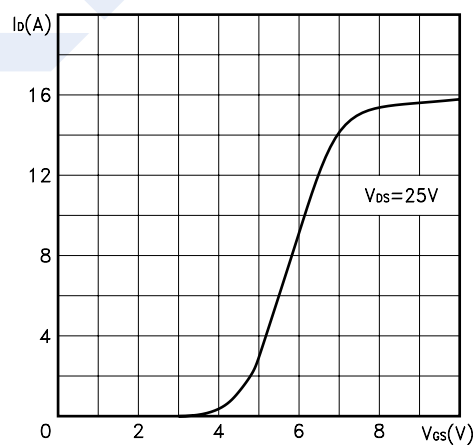


Figure 5. Transconductance

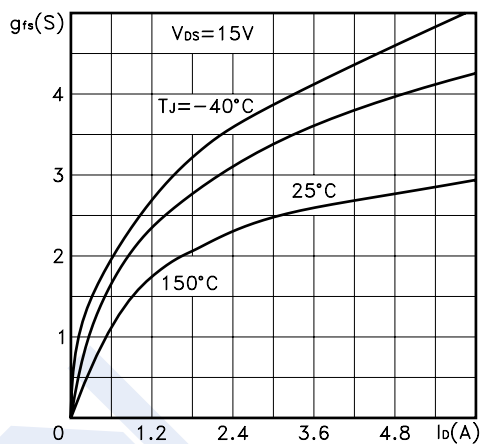
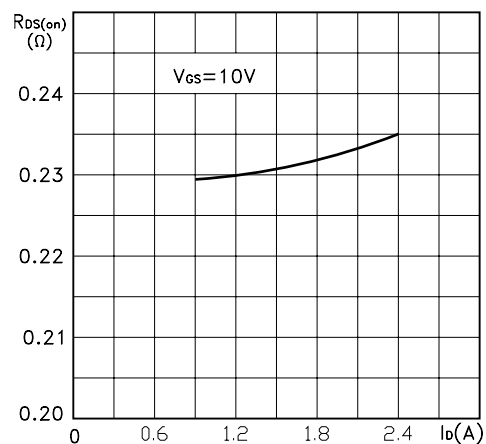


Figure 6. Static drain-source on resistance



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■ Typical Characteristics

Figure 7. Gate charge vs. gate-source voltage

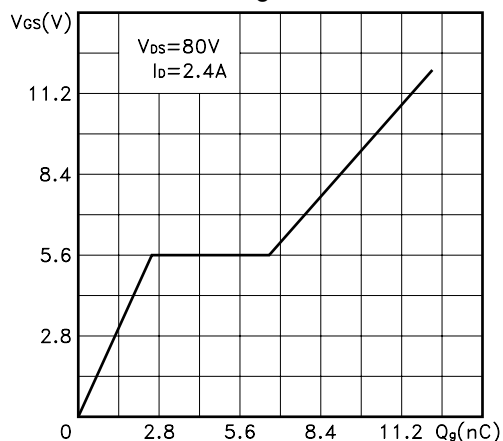


Figure 8. Capacitance variations

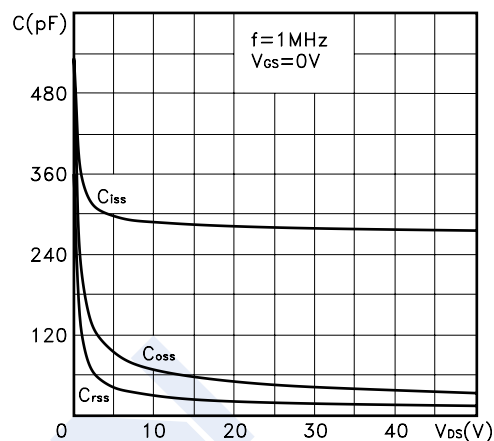


Figure 9. Normalized gate threshold voltage vs. temperature

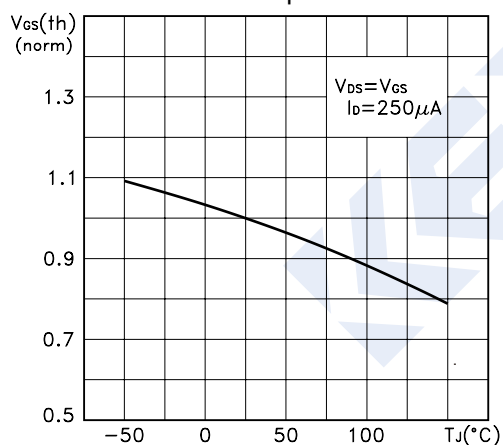


Figure 10. Normalized on resistance vs. temperature

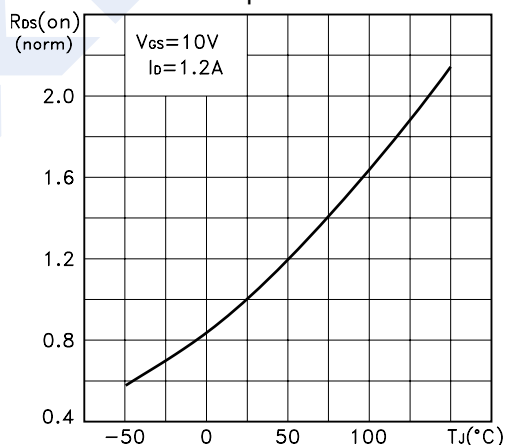


Figure 11. Source-drain diode forward characteristics

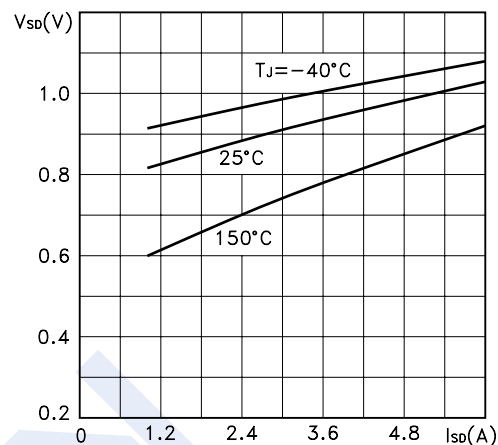
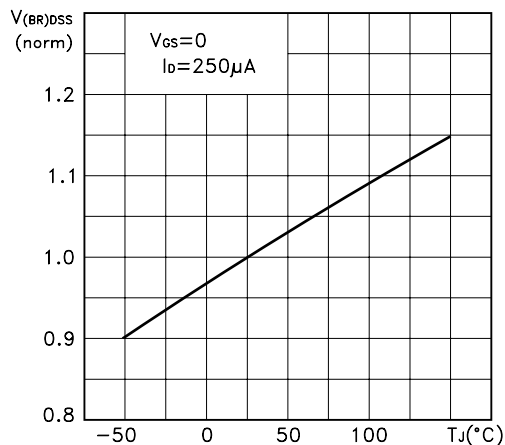


Figure 12. Normalized BV_{DSS} vs. temperature



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■ Typical Characteristics

Figure 13. Max drain current vs. temperature

