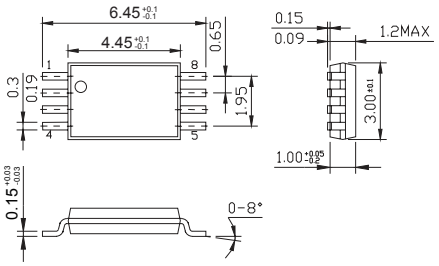
Dual N-Channel MOSFET
KX4N03W

TSSOP-8

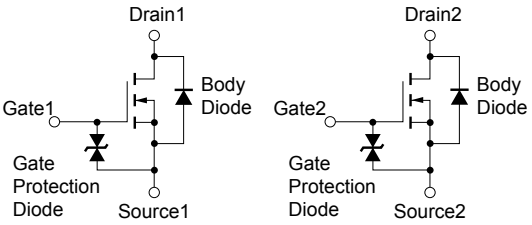
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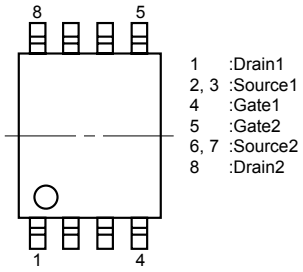


■ Features

- Low C_{iss} C_{iss} = 580 pF TYP.
- Built-in G-S protection diode against ESD
- Low on-state resistance

$R_{DS(on)1}$ = 67.0 m MAX. (V_{GS} = 10 V, I_D = 2.0 A)
$R_{DS(on)2}$ = 86.0 m MAX. (V_{GS} = 4.5 V, I_D = 2.0 A)
$R_{DS(on)3}$ = 95.0 m MAX. (V_{GS} = 4.0 V, I_D = 2.0 A)





■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	Tc=25℃	I_D	±3.8	A
Pulsed Drain Current (Note.1)		I_{DM}	±15.2	
Power Dissipation (Note.1)	TA=25℃	P_D	1	W
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: PW ≤ 10 μs, Duty Cycle ≤ 1%

■ Marking

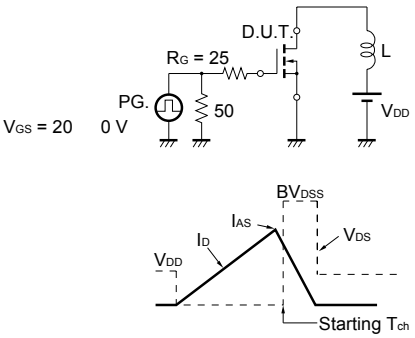
Marking	4N03 KA***

Dual N-Channel MOSFET
KX4N03W

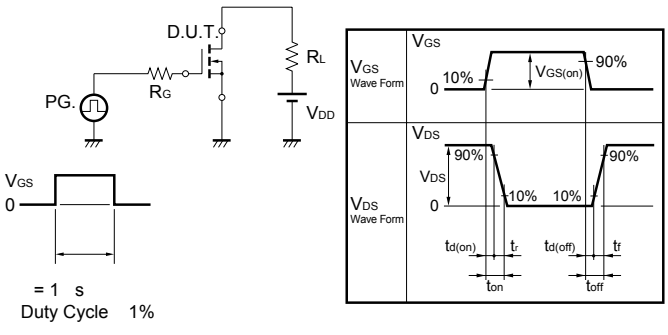
■ Electrical Characteristics Ta = 25℃

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 60 V, V_{GS} = 0 V			10	uA
Gate Leakage Current	I_{GSS}	V_{GS} = ±20 V, V_{DS} = 0 V			±10	uA
Gate Cut-off Voltage	$V_{GS(off)}$	V_{DS} = 10 V, I_D = 1 mA	1.5		2.5	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS} = 10 V, I_D = 2.0 A	2.5			S
Drain to Source On-state Resistance	$R_{DS(on)1}$	V_{GS} = 10 V, I_D = 2.0 A			67	mΩ
	$R_{DS(on)2}$	V_{GS} = 4.5 V, I_D = 2.0 A			86	mΩ
	$R_{DS(on)3}$	V_{GS} = 4.0 V, I_D = 2.0 A			95	mΩ
Input Capacitance	C_{iss}	V_{DS} = 10 V		580		pF
Output Capacitance	C_{oss}	V_{GS} = 0 V		100		pF
Reverse Transfer Capacitance	C_{rss}	f = 1 MHz		50		pF
Turn-on Delay Time	$t_{d(on)}$	V_{DD} = 30 V, I_D = 2.0 A		10		ns
Rise Time	t_r	V_{GS} = 10 V		9		ns
Turn-off Delay Time	$t_{d(off)}$	R_G = 6Ω		32		ns
Fall Time	t_f			4		ns
Total Gate Charge	Q_G	V_{DD} = 48 V		12		nC
Gate to Source Charge	Q_{GS}	V_{GS} = 10 V		2		nC
Gate to Drain Charge	Q_{GD}	I_D = 3.8 A		3		nC
Body Diode Forward Voltage	$V_{F(S-D)}$	I_F = 3.8 A, V_{GS} = 0 V		0.80		V
Reverse Recovery Time	t_{rr}	I_F = 3.8 A, V_{GS} = 0 V		33		ns
Reverse Recovery Charge	Q_{rr}	di/dt = 100 A/u s		58		nC
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	60			V

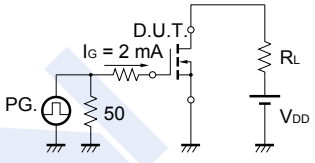
TEST CIRCUIT 1 AVALANCHE CAPABILITY



TEST CIRCUIT 2 SWITCHING TIME



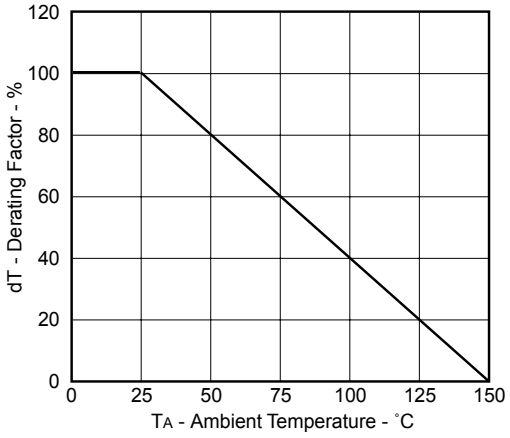
TEST CIRCUIT 3 GATE CHARGE



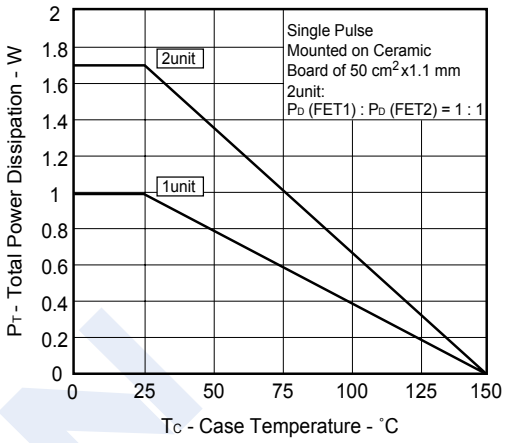
Dual N-Channel MOSFET
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■ Typical Characterisitics

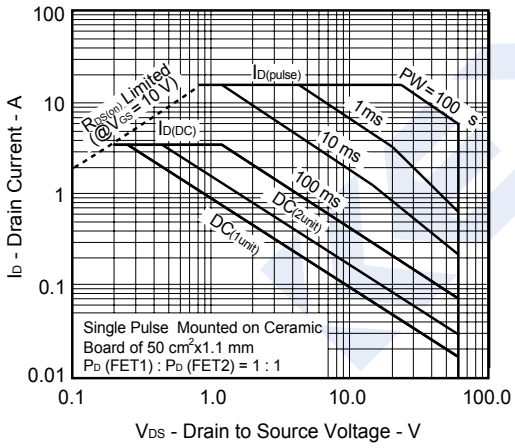
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



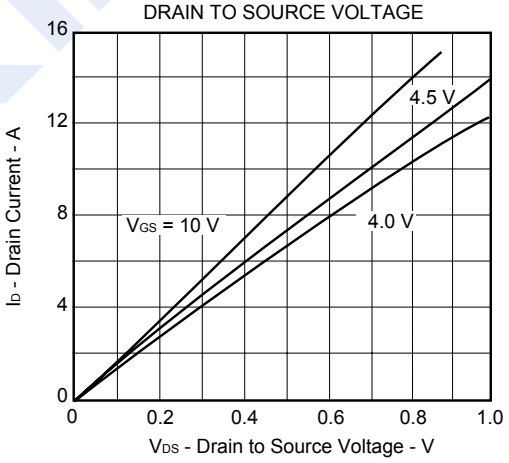
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



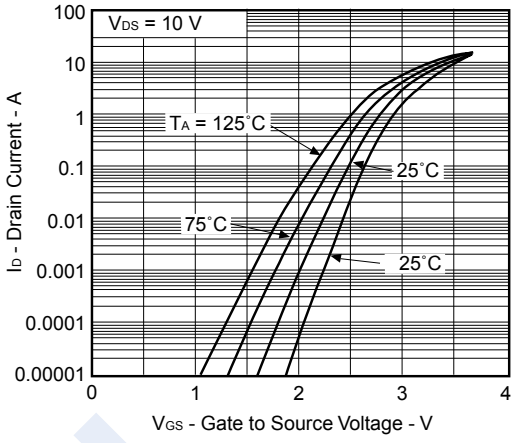
FORWARD BIAS SAFE OPERATING AREA



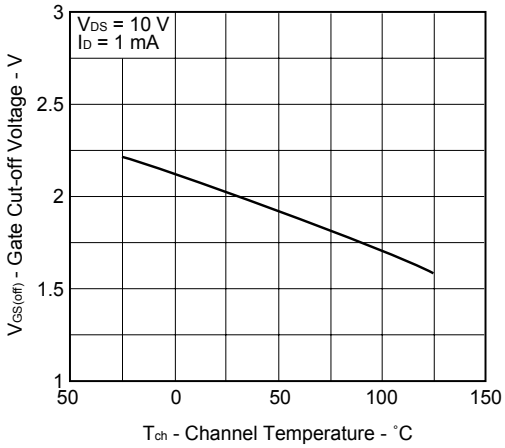
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



FORWARD TRANSFER CHARACTERISTICS



GATE CUT-OFF VOLTAGE vs. CHANNEL TEMPERATURE

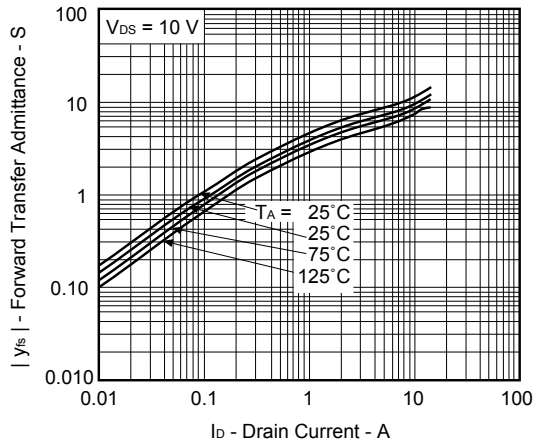


Dual N-Channel MOSFET

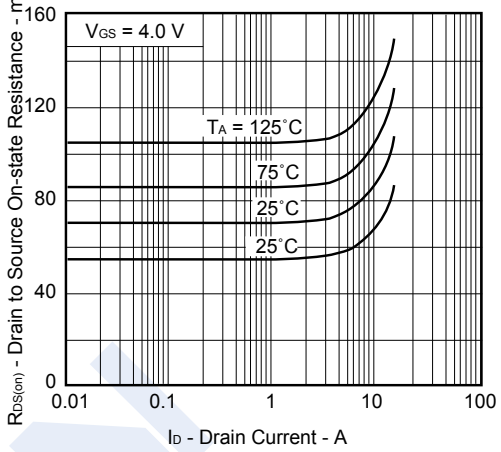
KX4N03W

■ Typical Characterisitics

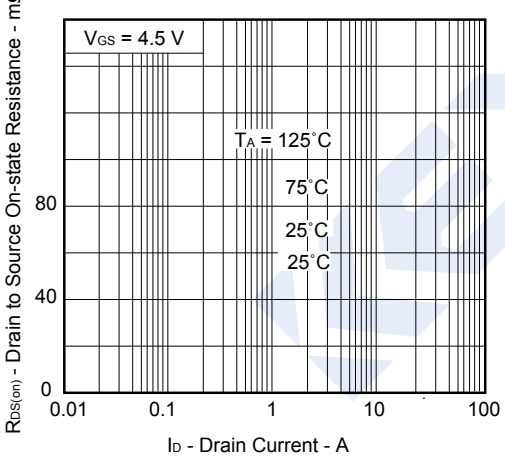
FORWARD TRANSFER ADMITTANCE Vs. DRAIN CURRENT



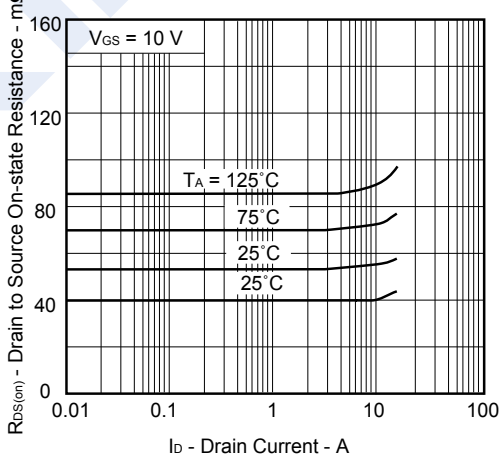
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



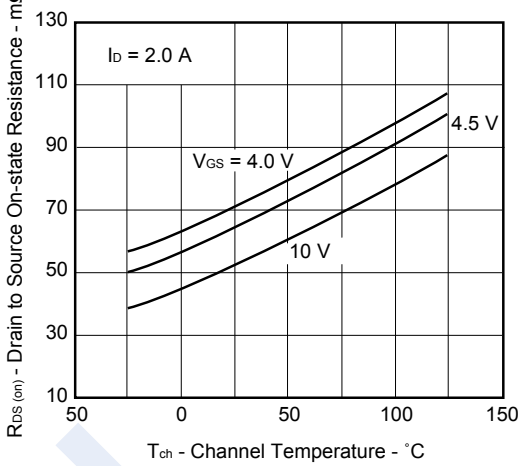
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



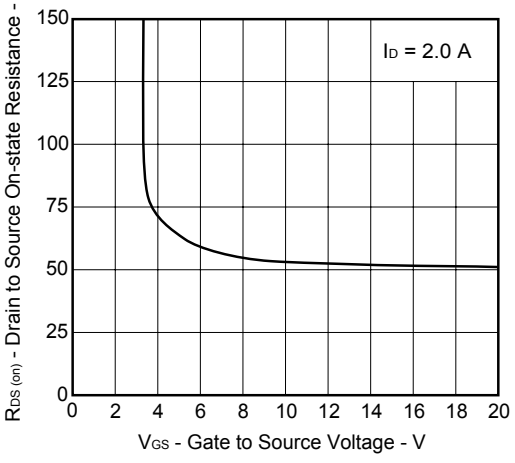
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



DRAIN TO SOURCE ON-STATE RESISTANCE vs. CHANNEL TEMPERATURE



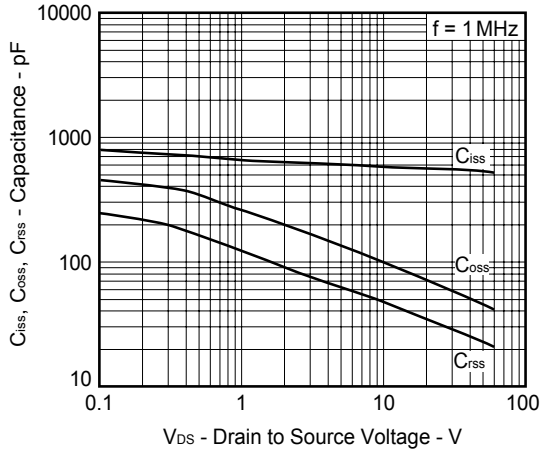
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



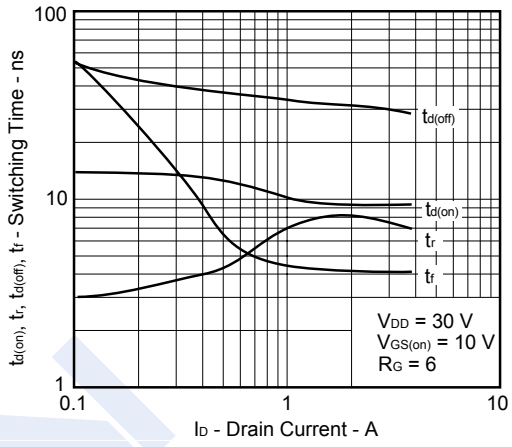
Dual N-Channel MOSFET
KX4N03W

■ Typical Characterisitics

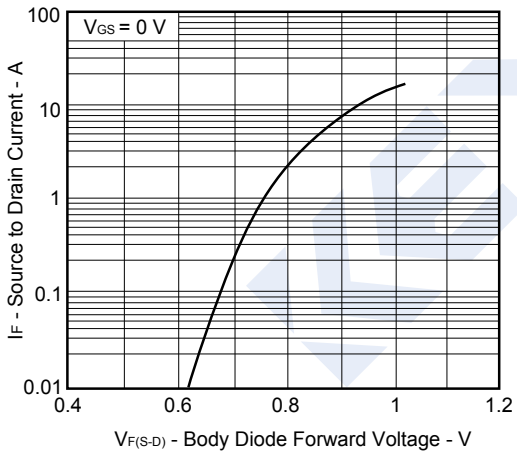
CAPACITANCE vs.
DRAIN TO SOURCE VOLTAGE



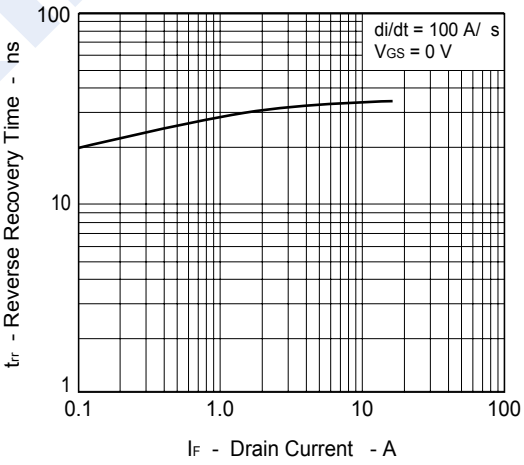
SWITCHING CHARACTERISTICS



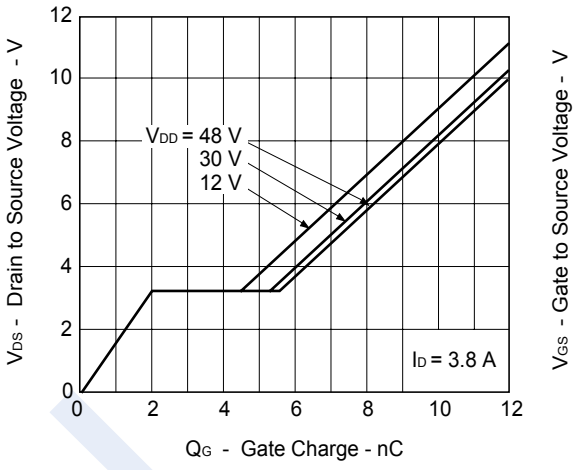
SOURCE TO DRAIN DIODE FORWARD VOLTAGE



REVERSE RECOVERY TIME vs.
DRAIN CURRENT



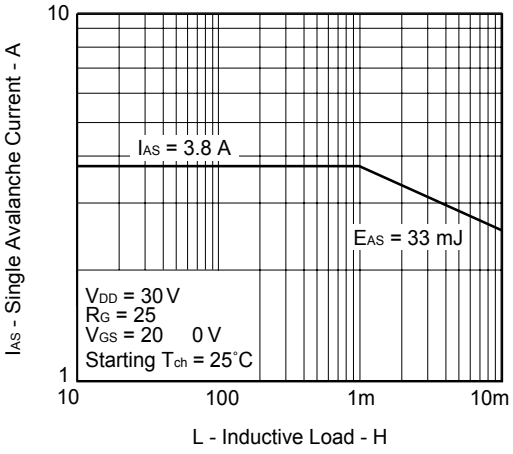
DYNAMIC INPUT/OUTPUT CHARACTERISTICS



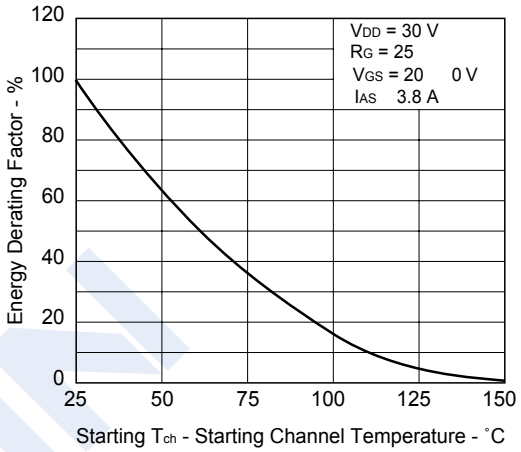
Dual N-Channel MOSFET
KX4N03W

■ Typical Characterisitics

SINGLE AVALANCHE CURRENT vs. INDUCTIVE LOAD



SINGLE AVALANCHE ENERGY DERATING FACTOR



TRANSIENT THERMAL RESISTANCE vs. PULSE WIDTH

