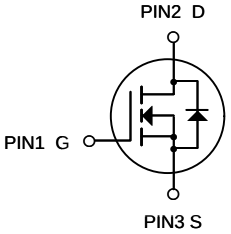
YUYUE

4N65

N-Channel Enhancement Mode MOSFET

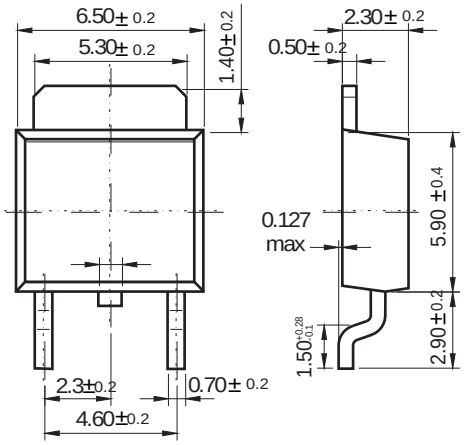
FEATURE

- 4A,650V,$R_{DS(ON)MAX}$=2.6Ω@V_{GS}=10V/2A
- Low gate charge
- Low C_{iss}
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability



TO-252

Unit: mm



Dimensions in inches and (millimeters)

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	650	V
Gate-Source Voltage		V_{GSS}	±30	V
Drain Current	Continuous	I_D	4	A
	Pulsed (Note 2)	I_{DM}	16	A
Avalanche Energy	Single Pulsed (Note 3)	E_{AS}	112	mJ
Peak Diode Recovery dv/dt (Note 4)		dv/dt	2.63	V/ns
Power Dissipation		P_D	33	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Repetitive Rating: Pulse width limited by maximum junction temperature.
3. L = 30mH, I_{AS} = 4 A, V_{DD} = 50V, R_G = 25 Ω Starting T_J = 25°C
4. I_{SD} ≤ 4.0A, di/dt ≤200A/μs, V_{DD} ≤BV_{DSS}, Starting T_J = 25°C

4N65

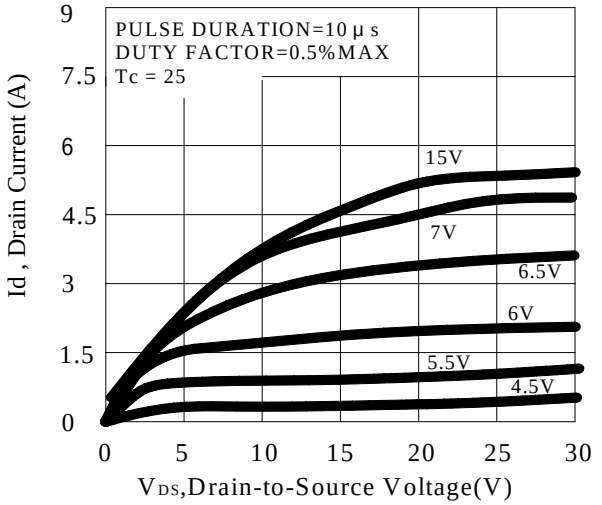
ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

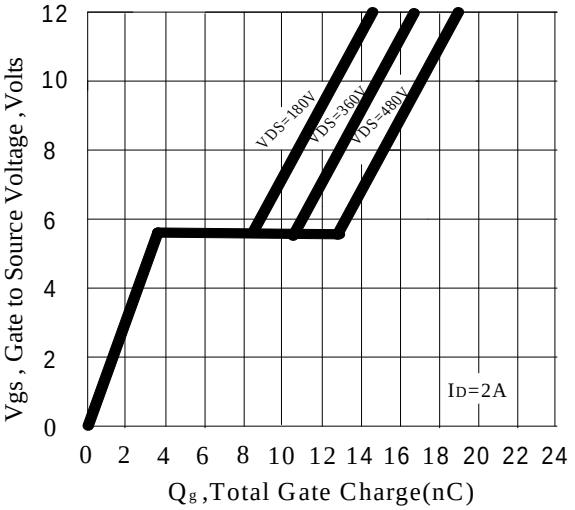
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	V_{GS} = 0 V, I_D = 250μA	650			V
Drain-Source Leakage Current		I_{DSS}	V_{DS} = 650 V, V_{GS} = 0 V			10	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS} = 30 V, V_{DS} = 0 V			100	nA
	Reverse		V_{GS} = -30 V, V_{DS} = 0 V			-100	nA
Breakdown Voltage Temperature Coefficient		BV_{DSS}/ T_J	I_D=250μA, Referenced to 25°C		0.6		V/°C
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = 250μA	2.0		4.0	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS} = 10 V, I_D = 2A		2.0	2.4	Ω
DYNAMIC CHARACTERISTICS							
Input Capacitance		C_{ISS}	V_{DS} = 25 V, V_{GS} = 0V, f = 1MHz		520	670	pF
Output Capacitance		C_{OSS}			70	90	pF
Reverse Transfer Capacitance		C_{RSS}			8	11	pF
SWITCHING CHARACTERISTICS							
Turn-On Delay Time		$t_{D(ON)}$	V_{DD} = 325V, I_D = 4.0A, R_G = 25Ω (Note 1, 2)		13	35	ns
Turn-On Rise Time		t_R			45	100	ns
Turn-Off Delay Time		$t_{D(OFF)}$			25	60	ns
Turn-Off Fall Time		t_F			35	80	ns
Total Gate Charge		Q_G	V_{DS}= 520V,I_D = 4A V_{GS}= 10V (Note 1, 2)		15	20	nC
Gate-Source Charge		Q_{GS}			3.4		nC
Gate-Drain Charge		Q_{GD}			7.1		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Drain-Source Diode Forward Voltage		V_{SD}	V_{GS} = 0 V, I_S = 4.0A			1.4	V
Maximum Continuous Drain-Source Diode Forward Current		I_S				4.4	A
Maximum Pulsed Drain-Source Diode Forward Current		I_{SM}				17.6	A
Reverse Recovery Time		t_{rr}	V_{GS} = 0V, I_S = 4.0A, dI_F/dt = 100 A/μs (Note 1)		250		ns
Reverse Recovery Charge		Q_{RR}			1.5		μC

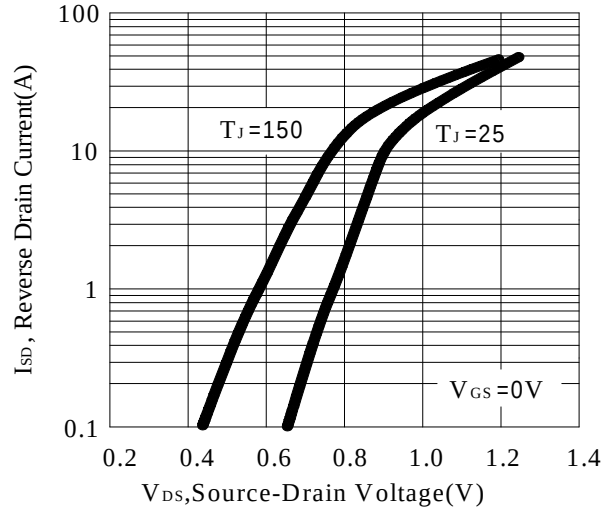
Note: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%

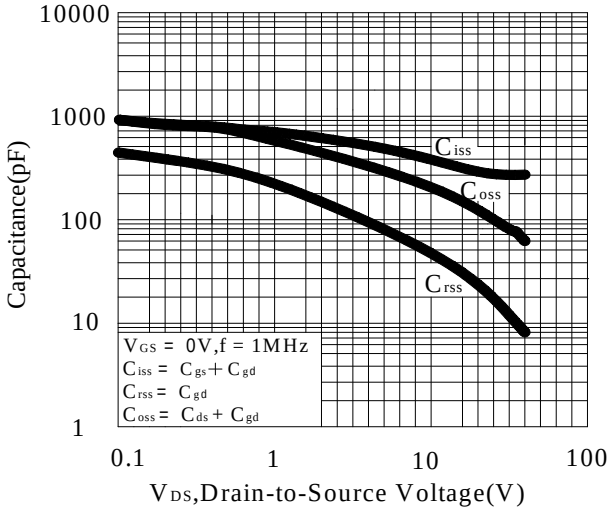
2. Essentially independent of operating temperature

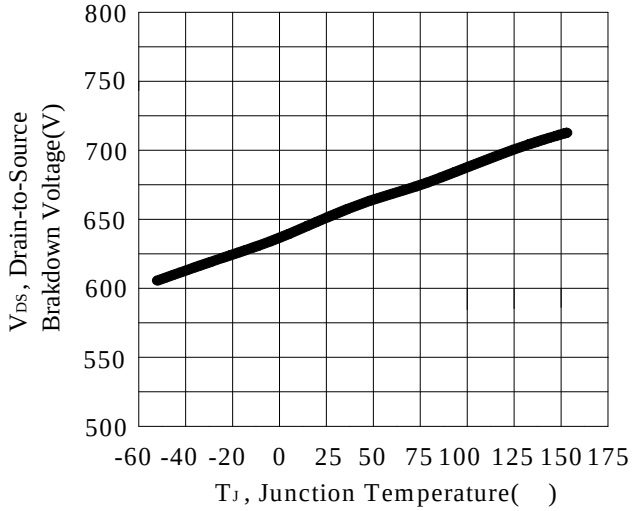
RATING AND CHARACTERISTIC CURVES (4N65)

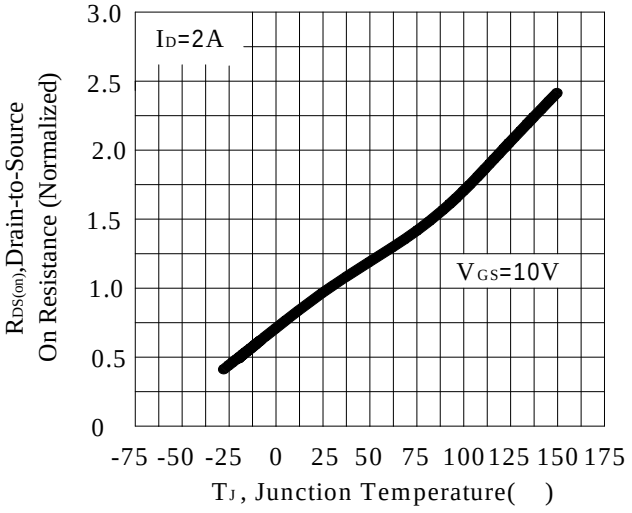












RATING AND CHARACTERISTIC CURVES (4N65)