

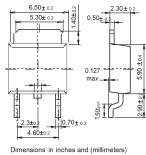
FEATURE

- 1A/60V/22Ω @ $V_{GS}=10V$, $V_{DS}=1A$
- Low gate charge
- Low C_{iss}
- Fast switching
- 100% avalanche tested
- Improved d-t 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_{DS}	650	V
Gate-Source Voltage	V_{GS}	±30	V
Drain Current	I_D	1A	A
Drain Current	I_{DS}	10	A
Avalanche Energy	E_{AS}	112	mJ
Peak Diode Recovery time	t_{rr}	3-2	Vms
Power Dissipation	P_D	25	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 = 10m, I_{AS} = 4.73A, V_{GS} = 50V, $R_{\theta JA}$ = 25°C/W, T_J = 25°C
4. I_{AS} ≤ 7.5A, dI/dt ≤ 200A/μs, V_{GS} ≥ 4V, V_{DS} = 50V, Starting T_J = 25°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$, $I_D=250\mu A$	650			V
Drain-Source Leakage Current	I_{DSS}	$V_{GS}=650V$, $V_{DS}=0V$		10		μA
Gate-Source Leakage Current	I_{GSS}	Forward Reverse $V_{GS}=30V$, $V_{DS}=0V$ $V_{GS}=-30V$, $V_{DS}=0V$		100		nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	2.0	4.0		V
Static Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=10V$, $I_D=2.5A$	1.8	2.2		Ω
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	$V_{GS}=0V$, $V_{DS}=25V$, $f=1.0$ MHz		623		pF
Output Capacitance	C_{oss}	$V_{GS}=0V$, $V_{DS}=25V$, $f=1.0$ MHz		62		pF
Reverse Transfer Capacitance	C_{rss}	$V_{GS}=0V$, $V_{DS}=25V$, $f=1.0$ MHz		2.9		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge (Note 1)	Q_g	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=2.0A$		15		nC
Gate-Source Charge	Q_{gs}	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=2.0A$		5.6		nC
Gate-Drain Charge	Q_{gd}	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=2.0A$		2.5		nC
Turn-on Delay Time (Note 1)	$t_{d(on)}$	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=0.5A$		4.4		ns
Rise Time	t_r	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=0.5A$		24		ns
Turn-off Delay Time	$t_{d(off)}$	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=0.5A$		122		ns
Fall Time	t_f	$V_{GS}=100V$, $V_{DS}=10V$, $I_D=0.5A$		25		ns

SOURCE: DRAIN DIODE RATINGS AND CHARACTERISTICS

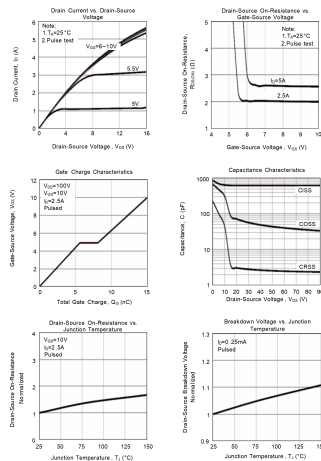
Maximum Body Diode Continuous Current	I_{S}			5		A
Maximum Body Diode Pulsed Current	I_{SP}			10		A
Drain-Source Diode Forward Voltage (Note 1)	V_{SD}	$V_{GS}=0V$, $I_S=5.0A$		1.4		V
Reverse Recovery Time (Note 1)	t_{rr}	$V_{GS}=0V$, $I_S=5.0A$		328		ns
Reverse Recovery Charge	Q_{rr}	$V_{GS}=0V$, $I_S=5.0A$		2.85		μC

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

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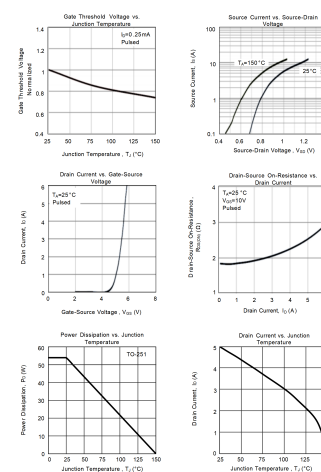
RATING AND CHARACTERISTIC CURVES (5N65)



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