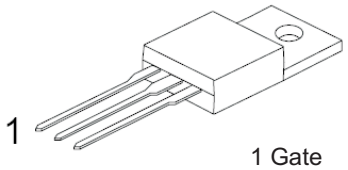
TY Semicondutor®

Product specification

2N60

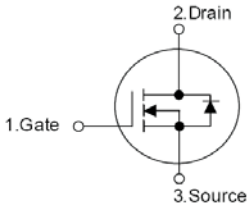
TO-220



1 Gate
2 Drain
3 Source

■ Features

- $R_{DS(ON)}$ = 3.8Ω @V_{GS} = 10V.
- Low gate charge (typical 9.0 nC).
- Low Crss (typical 5.0 pF).
- Fast switching capability.
- Avalanche energy specified
- Improved dv/dt capability.



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	600	V
Gate-Source Voltage	V_{GSS}	±30	V
Drain Current - Continuous (T_C = 25℃) Continuous (T_C = 100℃)	I_D	2.0 1.26	A
Drain Current - Pulsed * 1	I_{DP}	8.0	A
Single Pulsed Avalanche Energy * 2	E_{AS}	140	mJ
Avalanche Current * 1	I_{AR}	2.0	A
Repetitive Avalanche Energy * 1	E_{AR}	4.5	mJ
Peak Diode Recovery dv/dt * 3	dv/dt	4.5	V/ns
Power Dissipation (T_C = 25℃) Derate above 25℃	P_D	44 0.36	W W/℃
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to +150	℃
Maximum lead temperature for soldering purposes,1/8" from case for 5 seconds	T_L	300	℃
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	4	℃/W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	54	℃/W

* 1. Repetitive Rating : Pulse width limited by maximum junction temperature.

* 2. L = 64mH, I_{AS} = 2.0A, V_{DD} = 50V, R_G = 25Ω , Starting T_J = 25℃

* 3. I_{SD} ≤ 2.4A, di/dt ≤ 200A/□s, V_{DD} ≤ BV_{DSS}, Starting T_J = 25℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test conditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	V_{GS} = 0 V, I_D = 250 μA	600			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 600 V, V_{GS} = 0 V			10	μA
		V_{DS} = 480 V, T_C = 125℃			100	μA
Gate-Body Leakage Current, Forward	I_{GSSF}	V_{GS} = 30 V, V_{DS} = 0 V			100	nA
Gate-Body Leakage Current, Reverse	I_{GSSR}	V_{GS} = -30 V, V_{DS} = 0 V			-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 1 A		3.8	5.0	Ω
Forward Transconductance	g_{FS}	V_{DS} = 50V, I_D = 1 A * 1		2.25		S
Input Capacitance	C_{iss}	V_{DS} = 25 V, V_{GS} = 0 V, f = 1.0 MHz		270	350	pF
Output Capacitance	C_{oss}			40	50	pF
Reverse Transfer Capacitance	C_{rss}			5	7	pF
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 300 V, I_D = 2.4 A, R_G = 25Ω *1,2		10	30	ns
Turn-On Rise Time	t_r			25	60	ns
Turn-Off Delay Time	$t_{d(off)}$			20	50	ns
Turn-Off Fall Time	t_f			25	60	ns
Total Gate Charge	Q_g	V_{DS} = 480 V, I_D = 2.4A, V_{GS} = 10 V *1,2		9	11	nC
Gate-Source Charge	Q_{gs}			1.6		nC
Gate-Drain Charge	Q_{gd}			4.3		nC
Maximum Continuous Drain-Source Diode Forward Current	I_S				2	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				8	A
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S = 2.0 A			1.4	V
Reverse Recovery Time	t_{rr}	V_{GS} = 0 V, I_S = 2.4 A, dI_F / dt = 100 A/μs * 1		180		ns
Reverse Recovery Charge	Q_{rr}			0.72		μC

* 1. Pulse Test : Pulse width ≤ 300□s, Duty cycle ≤ 2%

* 2. Essentially independent of operating temperature.