N-CHANNEL ENHANCEMENT MODE MOSFET 2N6659X

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- Switching Regulators
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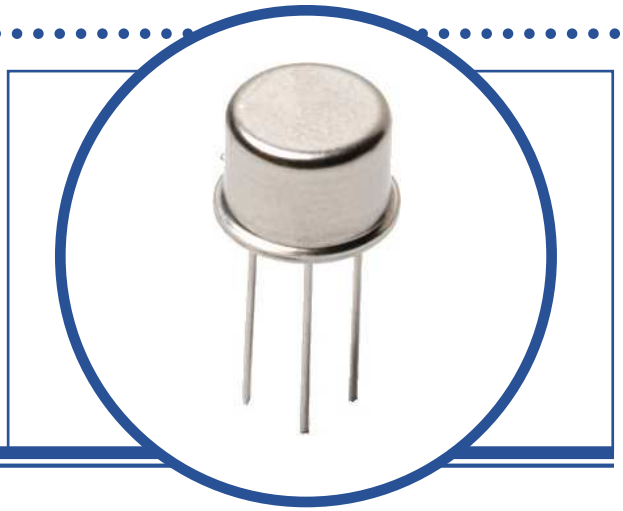

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{DS}	Drain – Source Voltage		35V
V_{GS}	Gate – Source Voltage		±20V
I_D	Drain Current	T_C = 25°C	1.4A
I_D	Drain Current	T_C = 100°C	1.0A
I_{DM}[1]	Pulsed Drain Current		3A
P_D	Power Dissipation	T_C = 25°C	6.25W
		Derate Above T_C = 25°C	0.05W/°C
T_J	Junction Temperature Range		-55 to +150°C
T_{stg}	Storage Temperature Range		-55 to +150°C

[1] Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)DSS}$	Drain – Source Breakdown Voltage	V_{GS} = 0	I_D = 10µA	35			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = 1.0mA	0.8	1.6	2	
I_{GSS}	Gate – Body Leakage Current	V_{GS} = ±15V				±100	nA
		V_{DS} = 0V	T_C =125°C			±500	
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 35V	V_{GS} = 0			10	µA
		V_{DS} = 35V	V_{GS} = 0 T_C = 125°C			500	
$I_{D(on)}$[2]	On-State Drain Current	V_{DS} = 15V	V_{GS} = 10V	1.5	1.8		A
$R_{DS(on)}$[2]	Drain – Source On Resistance	V_{GS} = 5V	I_D = 0.3A		1.8	5	Ω
		V_{GS} = 10V	I_D = 1.0A		1.3	2	
$V_{DS(on)}$[2]	Drain – Source On Voltage	V_{GS} = 5V	I_D = 0.3A		0.54	1.5	V
		V_{GS} = 10V	I_D = 1.0A		1.3	2	

DYNAMIC CHARACTERISTICS

$R_{DS(on)}$	Small Signal Drain – Source On Resistance	V_{GS} = 10V f = 1.0KHz	I_D = 1.0A		1.3	2	Ω
t_{off}	Turn-On Time	V_{DD} = 25V	V_{GEN} = 10V		8	10	ns
t_{on}	Turn-Off Time	R_L = 23Ω I_D = 1.0A	R_G = 25Ω		9	10	
g_{FS}[2]	Forward Transconductance	V_{DS} = 10V	I_D = 0.5A	170	350		ms
C_{iss}	Input Capacitance	V_{DS} = 24V V_{GS} = 0V f = 1.0MHz			35	50	pF
C_{oss}	Output Capacitance				28	40	
C_{rss}	Reverse Transfer Capacitance				2	10	

[2] Pulse Test $t_p \leq 380$ µS, δ 2%

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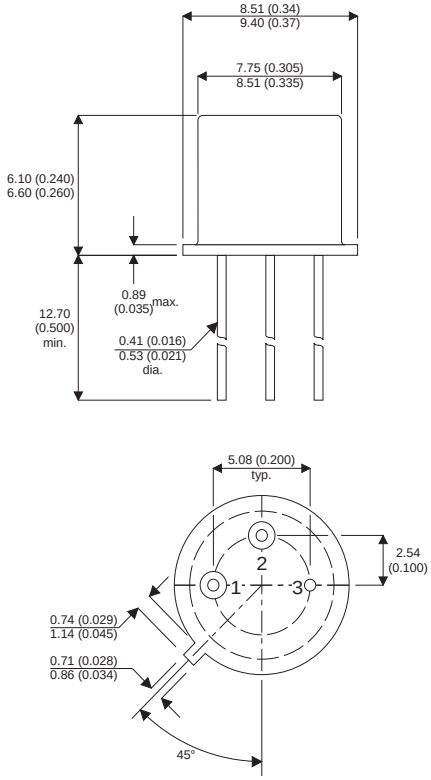
MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE

PIN1 – SOURCE PIN2 – GATE PIN3/CASE –DRAIN