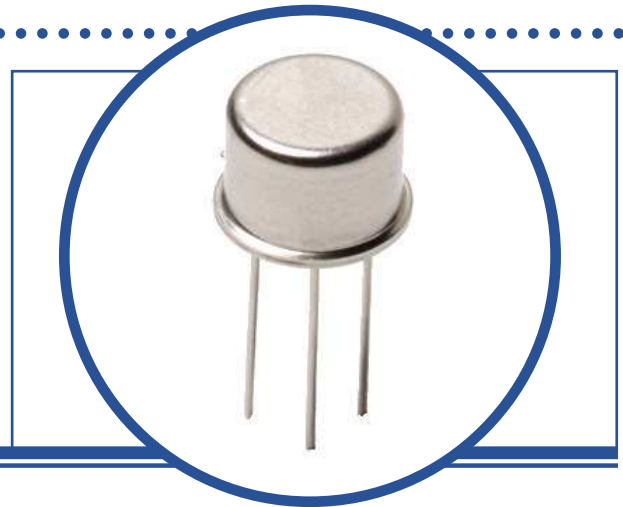


# N-CHANNEL ENHANCEMENT MODE POWER MOSFET

## 2N6661

- $V_{DS} = 90V$ ,  $I_D = 0.9A$ ,  $R_{DS(ON)} = 4.0\Omega$
- Fast Switching
- Low Threshold Voltage (Logic Level)
- Low  $C_{ISS}$
- Integral Source-Drain Body Diode
- Hermetic Metal TO39 Package
- High Reliability Screening Options Available



### ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ C$ unless otherwise stated)

$V_{DS}$	Drain – Source Voltage		90V
$V_{GS}$	Gate – Source Voltage		$\pm 20V$
$I_D$	Continuous Drain Current	$T_C = 25^\circ C$	0.9A
$I_{DM}$	Pulsed Drain Current <sup>(1)</sup>		3.0A
$P_D$	Total Power Dissipation at	$T_C \leq 25^\circ C$	5W
		De-rate $T_C > 25^\circ C$	40mW/ $^\circ C$
$P_D$	Total Power Dissipation at	$T_A \leq 25^\circ C$	725mW
		De-rate $T_A > 25^\circ C$	5.8mW/ $^\circ C$
$T_J$	Operating Temperature Range		-55 to +150 $^\circ C$
$T_{stg}$	Storage Temperature Range		-65 to +150 $^\circ C$

### THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case			25	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			172	$^\circ C/W$

#### Notes

- (1) Repetitive Rating: Pulse width limited by maximum junction temperature
- (2) Pulse Width  $\leq 300\mu s$ ,  $\delta \leq 2\%$

# N-CHANNEL ENHANCEMENT MODE POWER MOSFET 2N6661

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1.0\mu\text{A}$	90			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 1.0\text{mA}$	0.8		2.0	V
		$T_C = 125^\circ\text{C}$	0.3			
		$T_C = -55^\circ\text{C}$			2.5	
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS} = \pm 20\text{V}$ $V_{DS} = 0\text{V}$			$\pm 100$	nA
		$T_C = 125^\circ\text{C}$			$\pm 500$	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 72\text{V}$ $V_{GS} = 0$			1.0	$\mu\text{A}$
		$T_C = 125^\circ\text{C}$			100	
$I_{D(ON)}^{(2)}$	On-State Drain Current	$V_{DS} = 10\text{V}$ $V_{GS} = 10\text{V}$	1.5			A
$R_{DS(on)}^{(2)}$	Static Drain-Source On-State Resistance	$V_{GS} = 5\text{V}$ $I_D = 0.3\text{A}$			5.3	$\Omega$
		$V_{GS} = 10\text{V}$ $I_D = 1.0\text{A}$			4.0	
		$T_C = 125^\circ\text{C}$			7.5	
$V_{DS(on)}^{(2)}$	Static Drain-Source On-State Voltage	$V_{GS} = 5\text{V}$ $I_D = 0.3\text{A}$			1.6	V
		$V_{GS} = 10\text{V}$ $I_D = 1.0\text{A}$			4.0	
		$T_C = 125^\circ\text{C}$			7.5	
$g_{fs}^{(2)}$	Forward Transconductance	$V_{DS} = 7.5\text{V}$ $I_D = 0.475\text{A}$	170			$\text{m}\Omega$
$V_{SD}^{(2)}$	Body Diode Forward Voltage	$V_{GS} = 0$ $I_S = 0.86\text{A}$	0.7		1.4	V
$t_{rr}^{(2)}$	Body Diode Reverse Recovery	$V_{GS} = 0$ $I_S = 1.0\text{A}$		350		ns

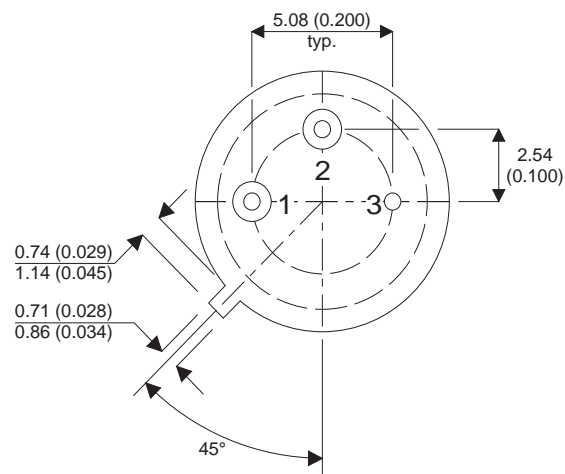
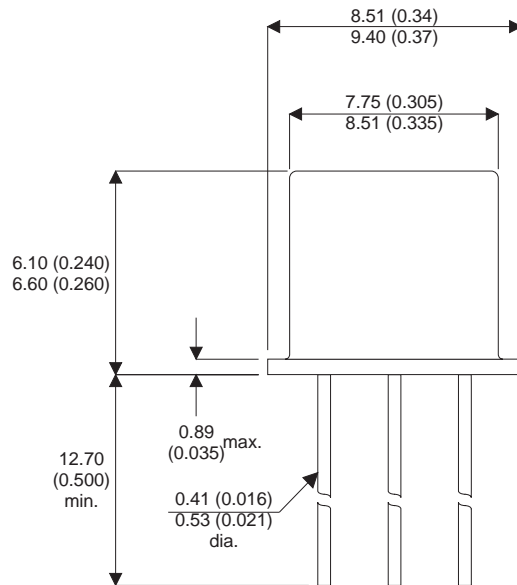
## DYNAMIC CHARACTERISTICS

$C_{iss}$	Input Capacitance	$V_{GS} = 0$			50	pF
$C_{oss}$	Output Capacitance	$V_{DS} = 25\text{V}$			40	
$C_{rss}$	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$			10	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 25\text{V}$			10	ns
$t_{d(off)}$	Turn-Off Delay Time	$I_D = 1.0\text{A}$ $R_G = 50\Omega$			10	

# N-CHANNEL ENHANCEMENT MODE POWER MOSFET 2N6661

## MECHANICAL DATA

Dimensions in mm (inches)



## TO39 PACKAGE (TO-205AD)

Pin 1 - Source

Pin 2 - Gate

Pin 3 / Case - Drain