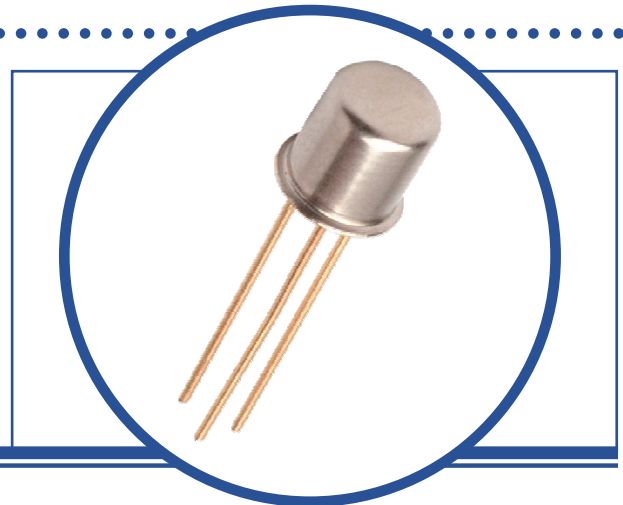


N-CHANNEL ENHANCEMENT MODE MOSFET

VN10K

- Low $R_{DS(on)}$, $V_{GS(th)}$, C_{ISS} And Fast Switching Speeds
- Hermetic TO-18 Metal package.
- Ideally Suited For Power Supply Circuits, Switching And Driver (Relay, Solenoid, Lamp etc..) Applications
- Screening Options Available



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

V_{DS}	Drain – Source Voltage		60V
V_{GS}	Gate – Source Voltage		+15V, -0.3V
I_D	Continuous Drain Current	$T_A = 25^\circ\text{C}$	0.17A
		$T_A = 100^\circ\text{C}$	0.11A
I_{DM}	Pulsed Drain Current ⁽¹⁾		1.0A
P_D	Total Power Dissipation at	$T_A = 25^\circ\text{C}$	312.5mW
		Derate Above 25°C	2.5mW/ $^\circ\text{C}$
T_J	Operating Temperature Range		-55 to +150 $^\circ\text{C}$
T_{stg}	Storage Temperature Range		-55 to +150 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			400	$^\circ\text{C/W}$

Notes

(1) Repetitive Rating: Pulse width limited by maximum junction temperature

N-CHANNEL ENHANCEMENT MODE MOSFET VN10K

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 100\mu\text{A}$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 1.0\text{mA}$	0.8		2.5	V
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = 15\text{V}$ $V_{DS} = 0\text{V}$			100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 48\text{V}$ $V_{GS} = 0$			10	μA
		$T_J = 125^\circ\text{C}$			500	
$I_{D(ON)}^{(2)}$	On-State Drain Current	$V_{DS} = 10\text{V}$ $V_{GS} = 10\text{V}$	0.75			A
$R_{DS(on)}^{(2)}$	Static Drain-Source On-State Resistance	$V_{GS} = 5\text{V}$ $I_D = 0.2\text{A}$			7.5	Ω
		$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$			5	
		$T_J = 125^\circ\text{C}$			9	
$g_{fs}^{(2)}$	Forward Transconductance	$V_{DS} = 10\text{V}$ $I_D = 0.5\text{A}$	100			$\text{m}\Omega$
$g_{os}^{(2)}$	Common Source Output Conductance	$V_{DS} = 7.5\text{V}$ $I_D = 50\text{mA}$		0.2		

DYNAMIC CHARACTERISTICS

C_{iss}	Input Capacitance	$V_{GS} = 0$			60	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$			25	
C_{rss}	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$			5	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 15\text{V}$, $R_L = 23\Omega$, $R_G = 50\Omega$			10	ns
$t_{d(off)}$	Turn-Off Delay Time	$I_D = 1.0\text{A}$, $V_{GEN} = 10\text{V}$			10	

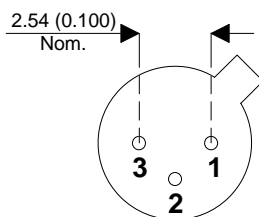
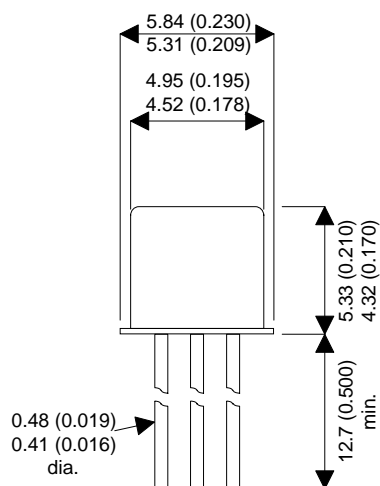
Notes

(2) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

N-CHANNEL ENHANCEMENT MODE MOSFET VN10K

MECHANICAL DATA

Dimensions in mm (inches)



TO-18 (TO-206AA) METAL PACKAGE Underside View

Pin 1 - Source

Pin 2 - Gate

Pin 3 - Case & Drain