



## P-Channel Enhancement-Mode Vertical DMOS FETs

### Ordering Information

$BV_{DSS} /$ $BV_{DGS}$	$R_{DS(ON)}$ (max)	$I_{D(ON)}$ (min)	Order Number / Package
			TO-92
-80V	5.0Ω	-1.1A	VP0808L

### Features

- Free from secondary breakdown
- Low power drive requirement
- Ease of paralleling
- Low  $C_{ISS}$  and fast switching speeds
- Excellent thermal stability
- Integral Source-Drain diode
- High input impedance and high gain
- Complementary N- and P-channel devices

### Applications

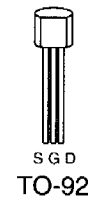
- Motor controls
- Converters
- Amplifiers
- Switches
- Power supply circuits
- Drivers (relays, hammers, solenoids, lamps, memories, displays, bipolar transistors, etc.)

### Absolute Maximum Ratings

Drain-to-Source Voltage	$BV_{DSS}$
Drain-to-Gate Voltage	$BV_{DGS}$
Gate-to-Source Voltage	± 30V
Operating and Storage Temperature	-55°C to +150°C
Soldering Temperature*	300°C

\* Distance of 1.6 mm from case for 10 seconds.

### Package Option



Note: See Package Outline section for dimensions.

## Thermal Characteristics

Package	$I_D$ (continuous)*	$I_D$ (pulsed)	Power Dissipation	$\theta_{jc}$ °C/W	$\theta_{ja}$ °C/W
TO-92	-0.28A	-3A	1W	125	170

\*  $I_D$  (continuous) is limited by max rated  $T_j$ .

## Electrical Characteristics (@ 25°C unless otherwise specified)

Symbol	Parameter	Min	Typ	Max	Unit	Conditions
$BV_{DSS}$	Drain-to-Source Breakdown Voltage	-80			V	$V_{GS} = 0V, I_D = -10\mu A$
$V_{GS(th)}$	Gate Threshold Voltage	-1.0		-4.5	V	$V_{GS} = V_{DS}, I_D = -1mA$
$I_{GSS}$	Gate Body Leakage			-100	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
$I_{DSS}$	Zero Gate Voltage Drain Current			-10	$\mu A$	$V_{GS} = 0V, V_{DS} = \text{Max Rating}$
				-500		$V_{GS} = 0V, V_{DS} = \text{Max Rating}$ $T_A = 125^\circ C$
$I_{D(ON)}$	ON-State Drain Current	-1.1			A	$V_{GS} = -10V, V_{DS} = -15V$
$R_{DS(ON)}$	Static Drain-to-Source ON-State Resistance			5.0	$\Omega$	$V_{GS} = -10V, I_D = -1A$
$G_{FS}$	Forward Transconductance	200			$m\Omega$	$V_{DS} = -10V, I_D = -0.5A$
$C_{ISS}$	Input Capacitance			150	pF	$V_{GS} = 0V, V_{DS} = -25V$ $f = 1MHz$
$C_{OSS}$	Common Source Output Capacitance			60		
$C_{RSS}$	Reverse Transfer Capacitance			25		
$t_{d(ON)}$	Turn-ON Delay Time			15	ns	$V_{DD} = -25V, I_D = -0.5A$ $R_{GEN} = 25\Omega$
$t_r$	Rise Time			40		
$t_{d(OFF)}$	Turn-OFF Time			30		
$t_f$	Fall Time			30		
$V_{SD}$	Diode Forward Voltage Drop		-1.2			

### Notes:

- All D.C. parameters 100% tested at 25°C unless otherwise stated. (Pulse test: 300 $\mu s$  pulse, 2% duty cycle.)
- All A.C. parameters sample tested.

## Switching Waveforms and Test Circuit

