

# N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

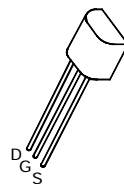
## BS170P

ISSUE 2 – SEPT 93

### FEATURES

- \* 60 Volt  $V_{DS}$
- \*  $R_{DS(on)}=5\Omega$

REFER TO ZVN3306A FOR GRAPHS



E-Line  
TO92 Compatible

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	60	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_D$	270	mA
Pulsed Drain Current	$I_{DM}$	3	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	625	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

### ELECTRICAL CHARACTERISTICS (at $T_{amb}=25^{\circ}C$ ).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	60			V	$I_D=100\mu A, V_{GS}=0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.8		3	V	$I_D=1mA, V_{DS}=V_{GS}$
Gate Body Leakage	$I_{GSS}$			10	nA	$V_{GS}=15V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$			0.5	$\mu A$	$V_{GS}=0V, V_{DS}=25V$
Static Drain-Source on-State Resistance (1)	$R_{DS(on)}$			5	$\Omega$	$V_{GS}=10V, I_D=200mA$
Forward Transconductance (1)(2)	$g_{fs}$		200		mS	$V_{DS}=10V, I_D=200mA$
Input Capacitance (2)	$C_{iss}$		60		pF	$V_{GS}=0V, V_{DS}=10V$ $f=1MHz$
Turn-On Time (2)(3)	$t_{(on)}$			10	ns	$V_{DD}=15V, I_D=600mA$
Turn-Off Time (2)(3)	$t_{(off)}$			10	ns	

(1) Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$  (2) Sample test

(3) Switching times measured with a 50 $\Omega$  source impedance and <5ns rise time on a pulse generator