Product Summary

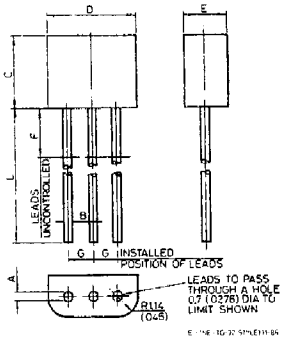
P-Channel Enhancement-Mode Vertical DMOS Power FET's

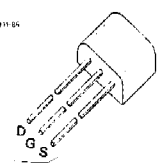
BVDSS/ BVDGS	RDS(ON) (max)	ID(ON) (min)	Order Number/Package						
			TO-39	TO-52	TO-92	TO-220	Quad P-DIP	Quad C-DIP	Dice
−40V	8Ω	−0.5A	VP0104N2	VP0104N9	VP0104N3	VP0104N5	VP0104N6	VP0104N7	VP0104ND
−60V	8Ω	−0.5A	VP0106N2	VP0106N9	VP0106N3	VP0106N5	VP0106N6	VP0106N7	VP0106ND
−90V	8Ω	−0.5A	VP0109N2	VP0109N9	VP0109N3	VP0109N5	—	—	VP0109ND

Electrical Characteristics (@ 25°C unless otherwise specified)

Symbol	Parameter		Min	Typ	Max	Unit	Conditions
BVDSS	Drain-to-Source Breakdown Voltage	VP0109	−90			V	ID = −1mA, VGS = 0
		VP0106	−60				
		VP0104	− 40				
VGS(th)	Gate Threshold Voltage		−1.5		−3.5	V	VGS = VDS, ID = −1mA
ΔVGS(th)	Change in VGS(th) with Temperature			−5.8	−6.5	mV/°C	ID = −1mA, VGS = VDS
IGSS	Gate Body Leakage			1	100	nA	VGS = ±20V, VDS = 0
IDSS	Zero Gate Voltage Drain Current				−10	μA	VGS = 0, VDS = Max Rating
					−1	mA	VGS = 0, VDS = 0.8 Max Rating TA = 125°C
ID(ON)	ON-State Drain Current		−0.15	−0.25		A	VGS = -5V, VDS = -25V
			−0.50	−1.0			VGS = -10V, VDS = -25V
RDS(ON)	Static Drain-to-Source ON-State Resistance			11	15	Ω	VGS = -5V, ID = -0.1A
				5	8		VGS = -10V, ID = -0.5A
ΔRDS(ON)	Change in RDS(ON) with Temperature			0.55	1.0	%/°C	ID = -0.5A, VGS = -10V
GFS	Forward Transconductance		150	200		m℧	VDS = -25V, ID = -0.5A
CISS	Input Capacitance			45	60	pF	VGS = 0, VDS = -25V, f = 1MHz,
COSS	Common Source Output Capacitance			22	30		
CRSS	Reverse Transfer Capacitance			3	8		
td(ON)	Turn-ON Delay Time			4	6	ns	VDD = -25V, ID = -1A, RS = 50Ω
tr	Rise Time			7	10		
td(OFF)	Turn-OFF Delay Time			3	5		
tf	Fall Time			4	6		
VSD	Diode Forward Voltage Drop			−1.2	−2.0	V	ISD = -2.5A, VGS = 0
trr	Reverse Recovery Time			400		ns	ISD = -1A, VGS = 0

E-Line (TO-92 style)





DIMENSION	MILLIMETRES		INCHES	
	MIN	MAX	MIN	MAX
A	0.41	0.495	0.016	0.0195
B	0.41	0.495	0.016	0.0195
C	3.61	4.01	0.142	0.158
D	4.37	4.77	0.172	0.188
E	2.16	2.41	0.085	0.095
F		2.5		0.098
G	1.27 NOM		0.050 NOM	
L	12.06	13.97	0.475	0.550