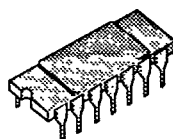


VQ2000 SERIESP-Channel Enhancement-Mode MOS Transistor
Arrays

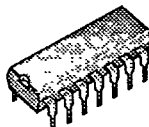
T-43-25

PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VQ2000J	-60	10	-0.24	Plastic
VQ2000P	-60	10	-0.24	Side Braze

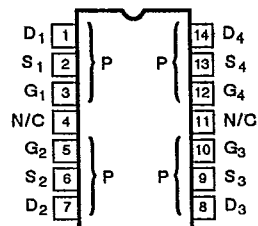
14-PIN DIP
SIDE BRAZE

14-PIN PLASTIC



TOP VIEW

Dual-In-Line Package



Performance Curves: VPDS06 (See Section 7)

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

PARAMETERS/TEST CONDITIONS		SYMBOL	VQ2000J	VQ2000P	UNITS
Drain-Source Voltage		V_{DS}	-60	-60	V
Gate-Source Voltage		V_{GS}	±30	±20	
Continuous Drain Current	$T_A = 25^{\circ}\text{C}$	I_D	-0.24	-0.24	A
	$T_A = 100^{\circ}\text{C}$		-0.15	-0.15	
Pulsed Drain Current ¹		I_{DM}	±0.8	±0.8	
Power Dissipation – Single	$T_A = 25^{\circ}\text{C}$	P_D	1.3	1.3	W
	$T_A = 100^{\circ}\text{C}$		0.52	0.52	
Power Dissipation – Quad	$T_A = 25^{\circ}\text{C}$		2	2	
	$T_A = 100^{\circ}\text{C}$		0.8	0.8	
Operating Junction and Storage Temperature		T_J, T_{stg}	-55 to 150		°C
Lead Temperature (1/16" from case for 10 seconds)		T_L	300		

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VQ2000J	VQ2000P	UNITS
Junction-to-Ambient - Single	R_{thJA}	96.2	96.2	$^\circ\text{C/W}$
Junction-to-Ambient - Quad		62.5	62.5	

¹Pulse width limited by maximum junction temperature



VQ2000 SERIES

ELECTRICAL CHARACTERISTICS ¹				LIMITS		
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VQ2000		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -10 μA	-70	-60		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -1 mA	-1.7	-1	-3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±20 V T _J = 125°C	± 1 ± 5		± 10 ± 50	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -48 V V _{GS} = 0 V T _J = 125°C	-0.02 -0.2		-1 -200	μA
On-State Drain Current ³	I _{D(ON)}	V _{DS} = -10 V, V _{GS} = -4.5 V	-80	-40		mA
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = -4.5 V, I _D = -25 mA	15		25	Ω
		V _{GS} = -10 V	8		10	
		I _D = -0.25 A T _J = 125°C	15		20	
Forward Transconductance ³	g _{FS}	V _{DS} = -10 V, I _D = -0.1 A	90	60		mS
Common Source Output Conductance ³	g _{OS}	V _{DS} = -10 V, I _D = -0.1 A	400			μS
DYNAMIC						
Input Capacitance	C _{iss}	V _{DS} = -25 V V _{GS} = 0 V f = 1 MHz	15		60	pF
Output Capacitance	C _{oss}		10		25	
Reverse Transfer Capacitance	C _{rss}		3		5	
SWITCHING						
Turn-On Time	t _{d(ON)}	V _{DD} = -25 V, R _L = 133 Ω I _D = -0.18 A, V _{GEN} = -10 V R _G = 25 Ω (Switching time is essentially independent of operating temperature)	6		15	ns
	t _r		10		20	
Turn-Off Time	t _{d(OFF)}		7		15	
	t _f		8		20	

- NOTES: 1. $T_A = 25^\circ\text{C}$ unless otherwise noted.
 2. For design aid only, not subject to production testing.
 3. Pulse test; $PW = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.