

VQ2000 SERIES

P-Channel Enhancement-Mode MOS Transistor Arrays

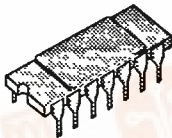


T-43-25

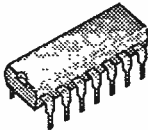
PRODUCT SUMMARY

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

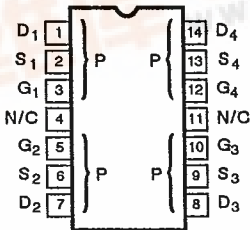


14-PIN PLASTIC



TOP VIEW

Dual-In-Line Package



Performance Curves: VPDS06 (See Section 7)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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°C	I _D	-0.24	-0.24	A
	T _A = 100°C		-0.15	-0.15	
Pulsed Drain Current ¹		I _{DM}	±0.8	±0.8	
Power Dissipation – Single	T _A = 25°C	P _D	1.3	1.3	W
	T _A = 100°C		0.52	0.52	
Power Dissipation – Quad	T _A = 25°C		2	2	
	T _A = 100°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	°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 $\leq 2\%$.