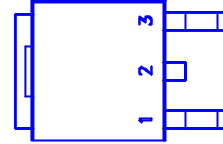
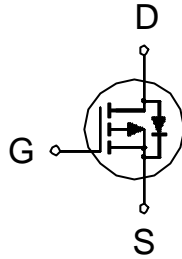


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	44m	-10A



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-40	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	-10	A
	$T_C = 70\text{ }^\circ\text{C}$		-8	
Pulsed Drain Current ¹		I_{DM}	-32	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	30	W
	$T_C = 70\text{ }^\circ\text{C}$		20	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$
Lead Temperature ($1/16$ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		4.1	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		80	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-1	-1.8	-3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -32\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = -30\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5\text{V}, V_{GS} = -10\text{V}$	-32			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5\text{V}, I_D = -8\text{A}$		57	68	m
		$V_{GS} = -10\text{V}, I_D = -10\text{A}$		38	44	

**P-Channel Logic Level Enhancement
Mode Field Effect Transistor (Preliminary)**

P4404EDG
TO-252(DPAK)
Lead-Free

Forward Transconductance ¹	g_{fs}	$V_{DS} = -10V, I_D = -10A$		11		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$		660		pF
Output Capacitance	C_{oss}			300		
Reverse Transfer Capacitance	C_{rss}			70		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V,$ $I_D = -10A$		14		nC
Gate-Source Charge ²	Q_{gs}			2.2		
Gate-Drain Charge ²	Q_{gd}			1.9		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -20V, R_L = 1$ $I_D \cong -1A, V_{GS} = -10V, R_{GS} = 6$		6.0	12.8	nS
Rise Time ²	t_r			9.2	18.6	
Turn-Off Delay Time ²	$t_{d(off)}$			19.2	34.8	
Fall Time ²	t_f			11.8	21.6	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_c = 25 °C)						
Continuous Current	I_S				-10	A
Pulsed Current ³	I_{SM}				-30	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$			-1	V
Reverse Recovery Time	t_{rr}	$I_F = -5 A, dI_F/dt = 100A / \mu S$		15.5		nS
Reverse Recovery Charge	Q_{rr}			7.9		nC

¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

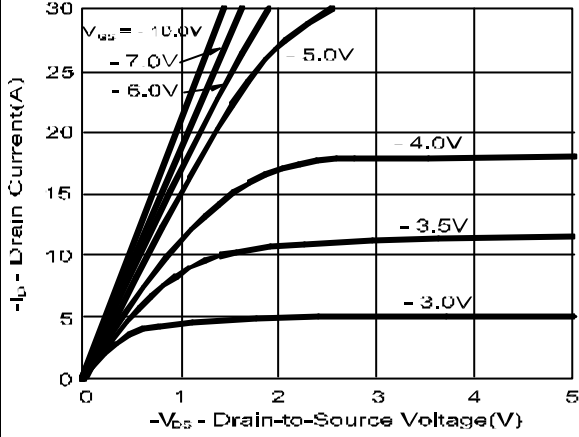
³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH “P4404EDG”, DATE CODE or LOT #

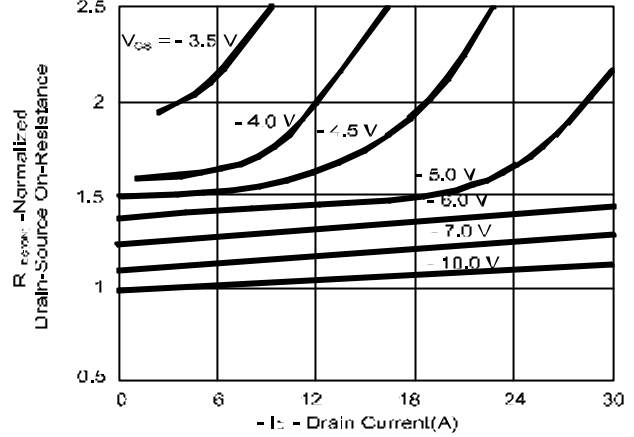
Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.

TYPICAL PERFORMANCE CHARACTERISTICS

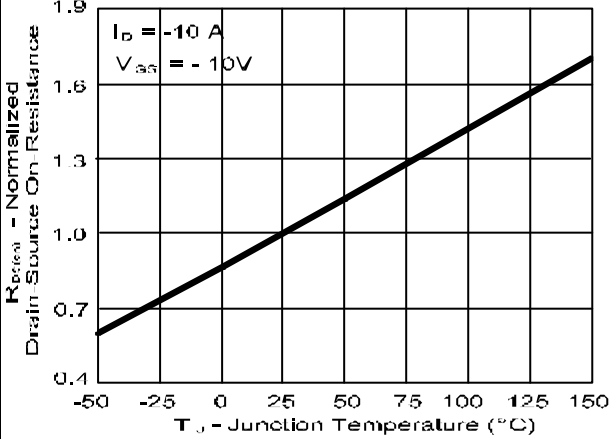
On-Region Characteristics



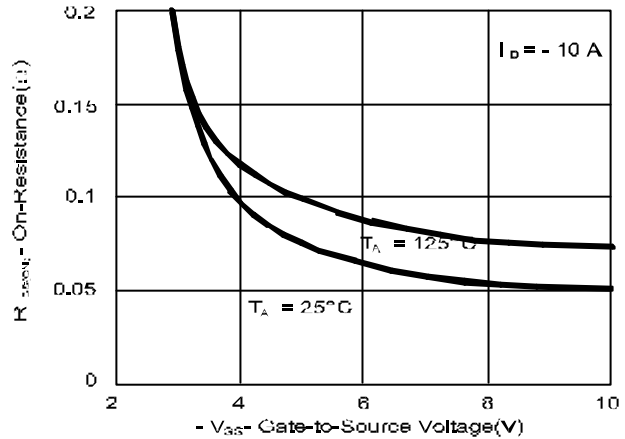
On-Resistance Variation with Drain Current and Gate Voltage



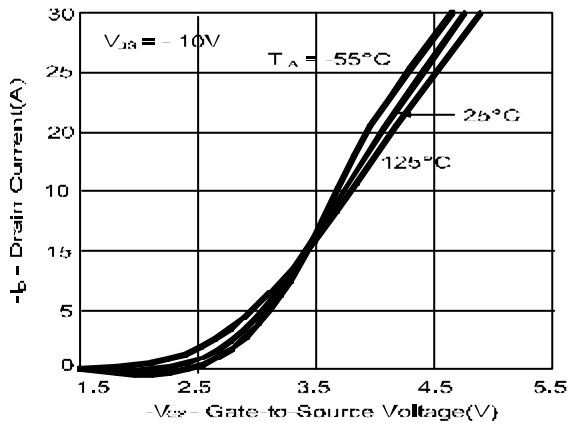
On-Resistance Variation with Temperature



On-Resistance Variation with Gate to-Source Voltage



Transfer Characteristics



Body Diode Forward Voltage Variation with Source Current and Temperature

