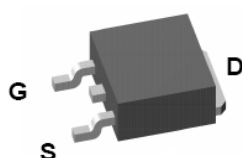


P5504EDG

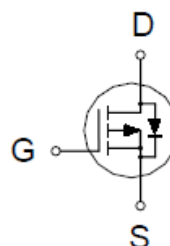
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	55mΩ @ $V_{GS} = -10V$	-21A



TO-252



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-40	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	-21	A
	$T_C = 100\text{ }^{\circ}\text{C}$		-13	
Pulsed Drain Current ¹		I_{DM}	-39	
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	41	W
	$T_C = 100\text{ }^{\circ}\text{C}$		16	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		75	

¹Pulse width limited by maximum junction temperature.

P5504EDG

P-Channel Enhancement Mode MOSFET

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-40			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.5	-2.0	-3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -32V, V_{GS} = 0V$			1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -10V$	-96			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -6A$		65	94	m Ω
		$V_{GS} = -10V, I_D = -8A$		38	55	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -10V, I_D = -8A$		11		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$		833		pF
Output Capacitance	C_{oss}			198		
Reverse Transfer Capacitance	C_{rss}			138		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V, I_D = -8A$		18		nC
Gate-Source Charge ²	Q_{gs}			3.3		
Gate-Drain Charge ²	Q_{gd}			6.8		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -20V, I_D \cong -1A, V_{GS} = -10V, R_{GS} = 6\Omega$		6.7	13.4	nS
Rise Time ²	t_r			9.7	19.4	
Turn-Off Delay Time ²	$t_{d(off)}$			19.8	35.6	
Fall Time ²	t_f			12.3	22.2	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Continuous Current	I_S				-21	A
Pulsed Current ³	I_{SM}				-39	
Forward Voltage ¹	V_{SD}	$I_F = -8A, V_{GS} = 0V$			-1	V
Reverse Recovery Time	t_{rr}	$I_F = -8A, dI_F/dt = 100A / \mu S$		17		nS
Reverse Recovery Charge	Q_{rr}			9		nC

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

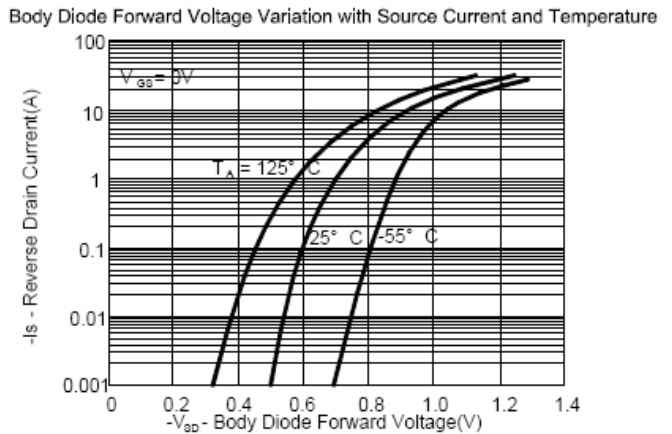
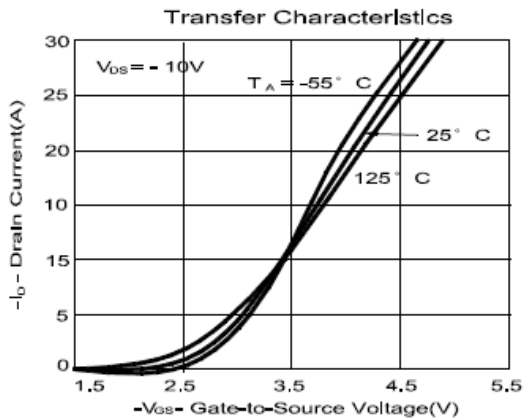
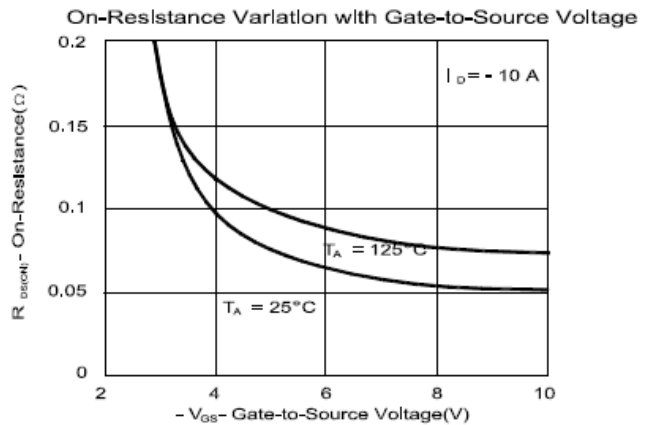
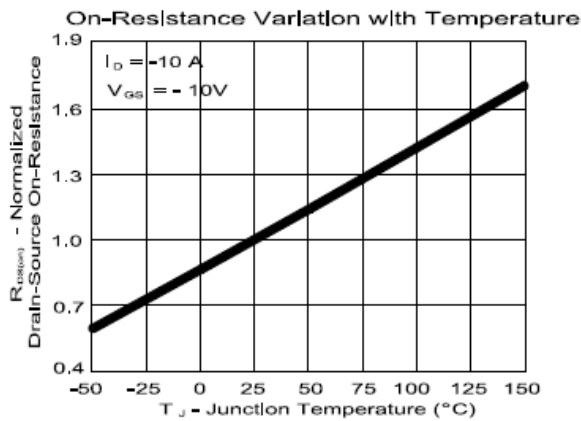
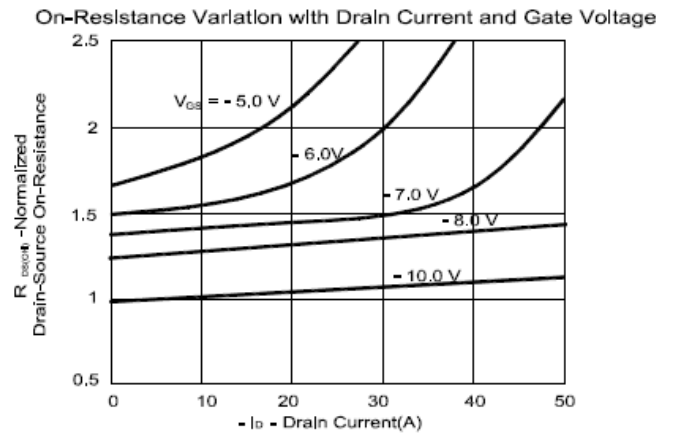
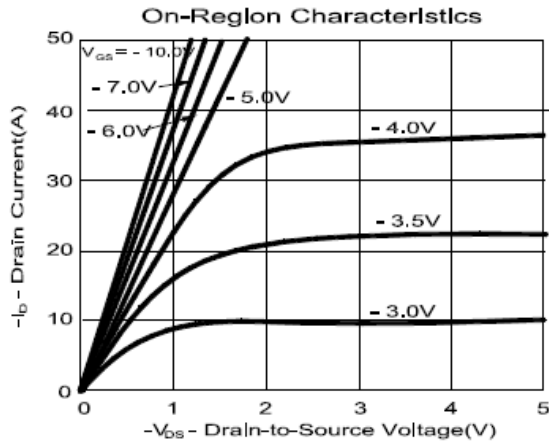
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

P5504EDG

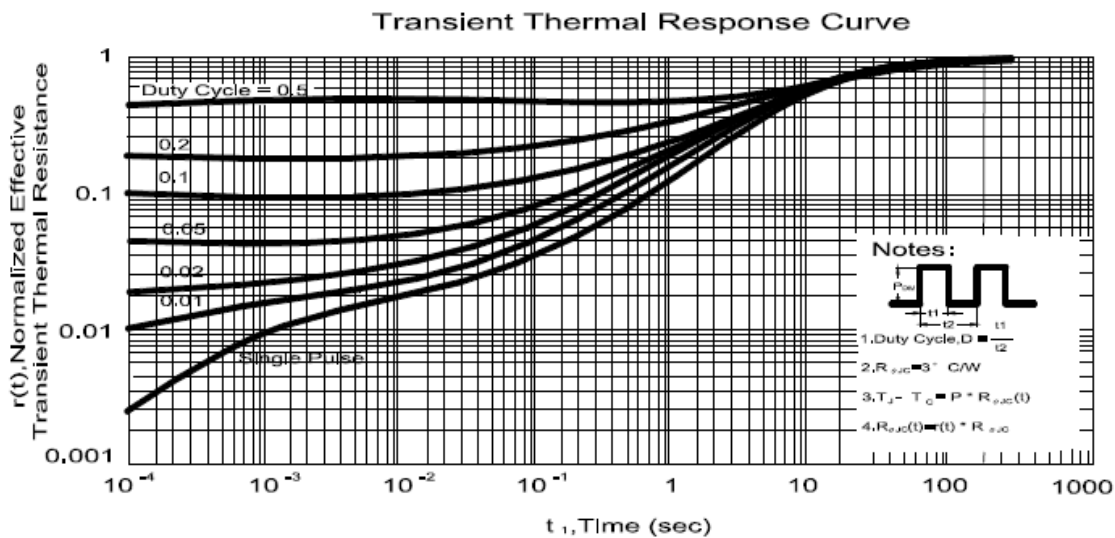
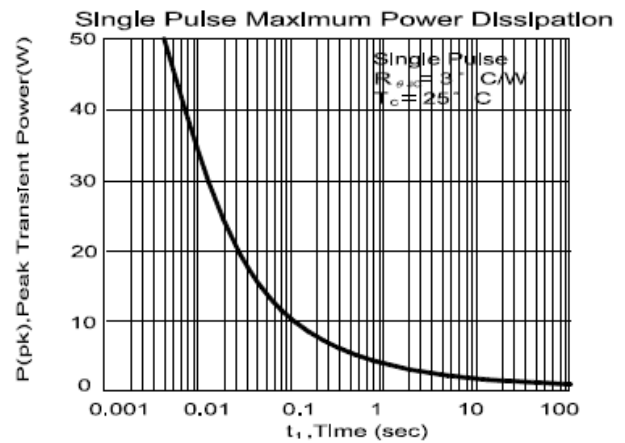
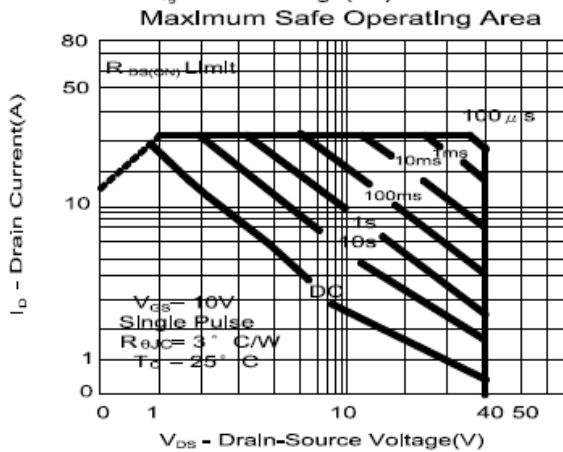
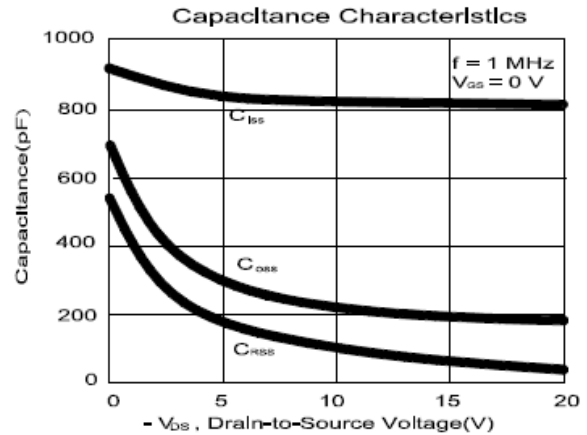
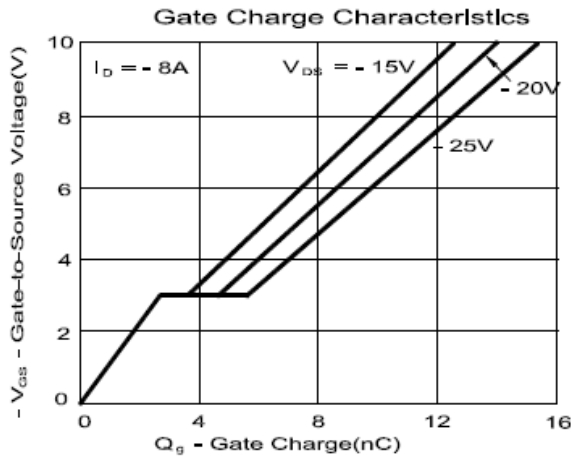
P-Channel Enhancement Mode MOSFET

TYPICAL PERFORMANCE CHARACTERISTICS



P5504EDG

P-Channel Enhancement Mode MOSFET



P5504EDG

P-Channel Enhancement Mode MOSFET

Package Dimension

TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.9	10	10.41	J	4.8		5.64
B	2.1	2.2	2.5	K	0.15		1.49
C	0.4	0.5	0.61	L	0.4	0.76	0.91
D	0.82	1.2	1.5	M	4.2	4.58	5
E	0.35	0.5	0.65	S	4.57	5.1	5.52
F	0		0.2	T	3.81	4.75	5.24
G	5.3	6.1	6.3	U	1.4		1.78
H	0.5		1.7	V	0.55	1.25	1.7
I	6.3	6.5	6.8				

