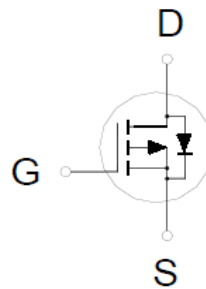
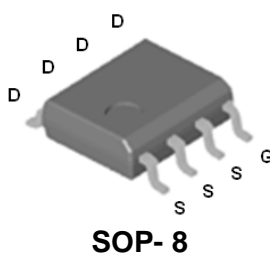


PA504EV

P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	150mΩ @ $V_{GS} = -10V$	-2.7A



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 ²	$T_A = 25\text{ }^\circ\text{C}$	I_D	-2.7	A
	$T_A = 70\text{ }^\circ\text{C}$		-2.1	
Pulsed Drain Current ^{1,2}		I_{DM}	-15	
Avalanche Current		I_{AS}	-10	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	5	mJ
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	1.8	W
	$T_A = 70\text{ }^\circ\text{C}$		1.2	
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-Ambient	$R_{\theta JA}$		70	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Limited only by maximum temperature allowed.

³The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$. The value in any given application depends on the user's specific board design.

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P-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS (T_A = 25 °C, Unless Otherwise Noted)

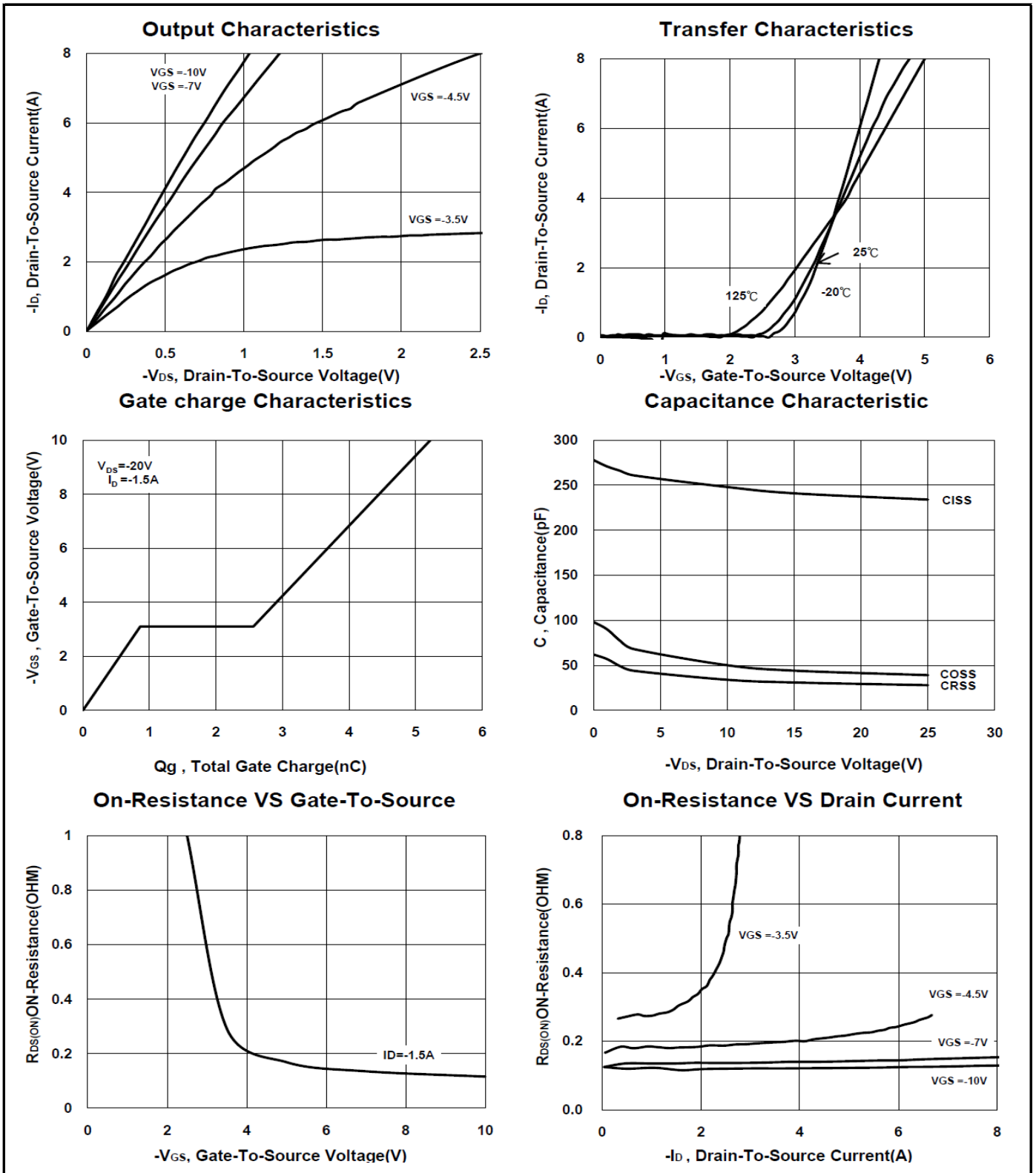
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-40			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.3	-1.8	-2.3	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -32V, V _{GS} = 0V			-1	μA
		V _{DS} = -30V, V _{GS} = 0V, T _J = 55 °C			-10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = -5V, V _{GS} = -10V	-15			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -1.2A		180	250	mΩ
		V _{GS} = -10V, I _D = -1.5A		120	150	
Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -1.5A		3.5		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -20V, f = 1MHz		240		pF
Output Capacitance	C _{oss}			40		
Reverse Transfer Capacitance	C _{rss}			29		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , I _D = -1.5A, V _{GS} = -10V		5.3		nC
Gate-Source Charge ²	Q _{gs}			1		
Gate-Drain Charge ²	Q _{gd}			1.9		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = -20V, I _D ≅ -1.5A, V _{GS} = -10V, R _{GS} = 6Ω		14		nS
Rise Time ²	t _r			6		
Turn-Off Delay Time ²	t _{d(off)}			30		
Fall Time ²	t _f			13		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_A = 25 °C)						
Continuous Current	I _S				-2.7	A
Forward Voltage ¹	V _{SD}	I _F = -1.5A, V _{GS} = 0V			-1.1	V
Reverse Recovery Time	t _{rr}	I _F = -1.5A, di/dt = 100A / μs		13		nS
Reverse Recovery Charge	Q _{rr}				7	

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

PA504EV

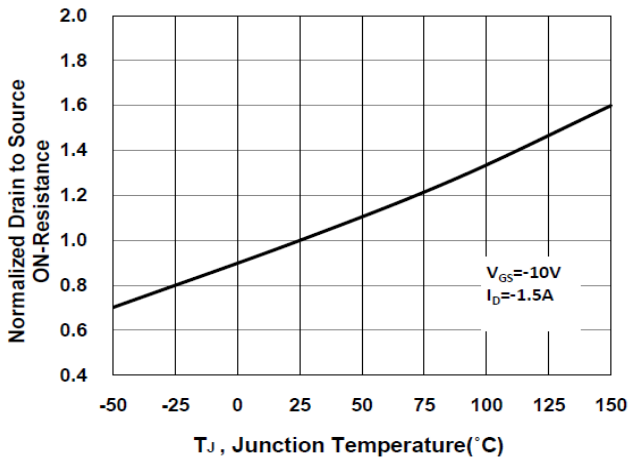
P-Channel Enhancement Mode MOSFET



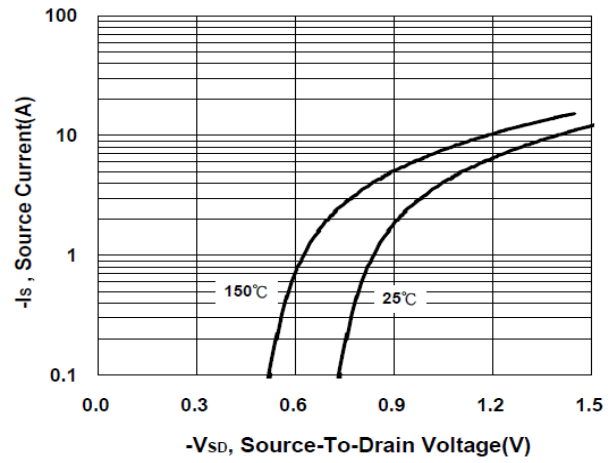
PA504EV

P-Channel Enhancement Mode MOSFET

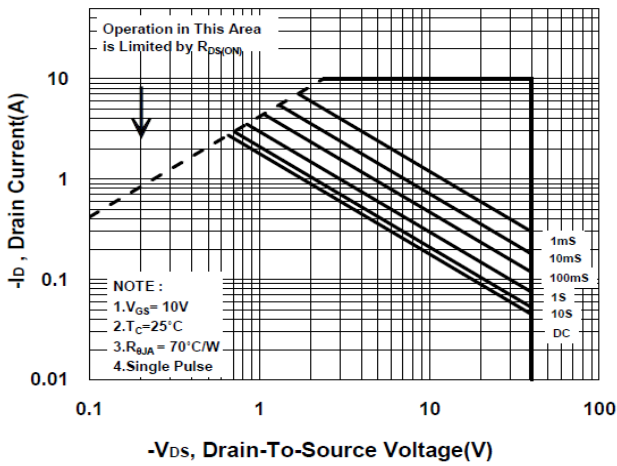
On-Resistance VS Temperature



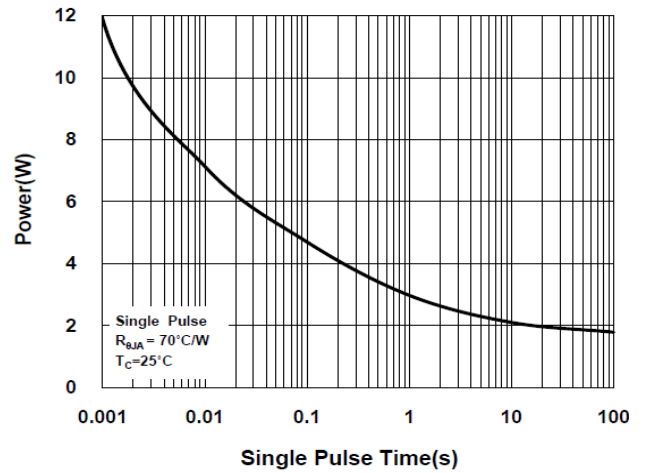
Source-Drain Diode Forward Voltage



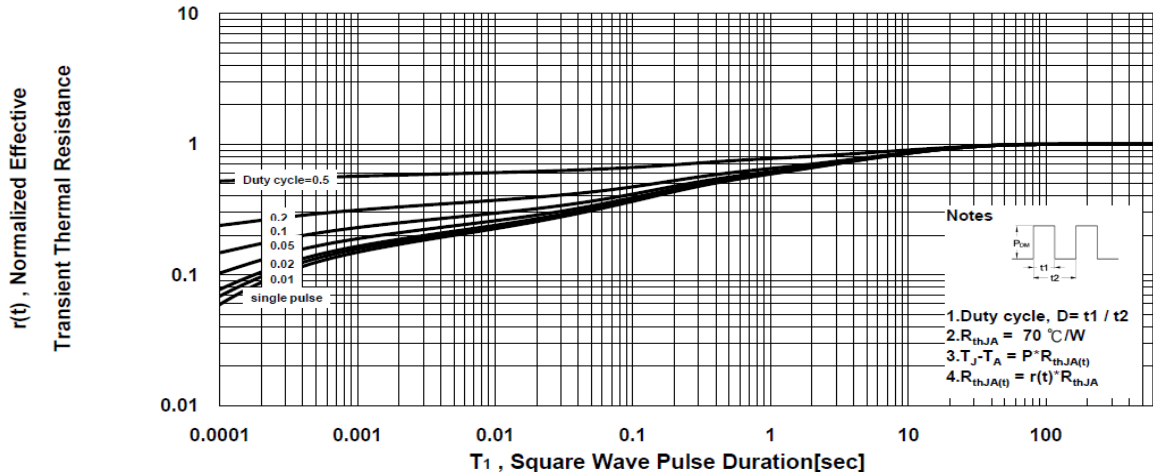
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



PA504EV
P-Channel Enhancement Mode MOSFET

Package Dimension

SOP-8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				

