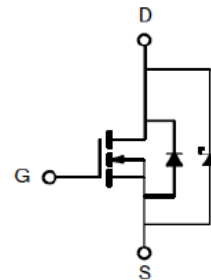
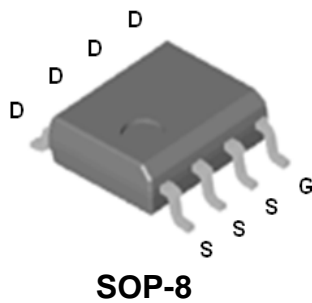


# PD0903BV

## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	9.5mΩ @ $V_{GS} = 10V$	15A



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	±20	V
Continuous Drain Current	$T_A = 25\text{ °C}$	$I_D$	15	A
	$T_A = 70\text{ °C}$		12	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	80	
Avalanche Current		$I_{AS}$	33	
Avalanche Energy	$L = 0.1\text{mH}$	$E_{AS}$	54	mJ
Power Dissipation	$T_A = 25\text{ °C}$	$P_D$	3.125	W
	$T_A = 70\text{ °C}$		2	
Operating Junction & Storage Temperature Range		$T_j, T_{stg}$	-55 to 150	°C

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

PARAMETERS/TEST CONDITIONS		SYMBOL	Schottky	UNITS
Reverse Current	$V_R = 45V$	$I_R$	0.05	mA
Forward Voltage	$I_F = 1A$	$V_F$	0.53	V

### THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$		40	°C / W
Junction-to-Ambient	Steady-State	$R_{\theta JA}$		75	

<sup>1</sup>Pulse width limited by maximum junction temperature.

## PD0903BV

### N-Channel Enhancement Mode MOSFET

#### ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)

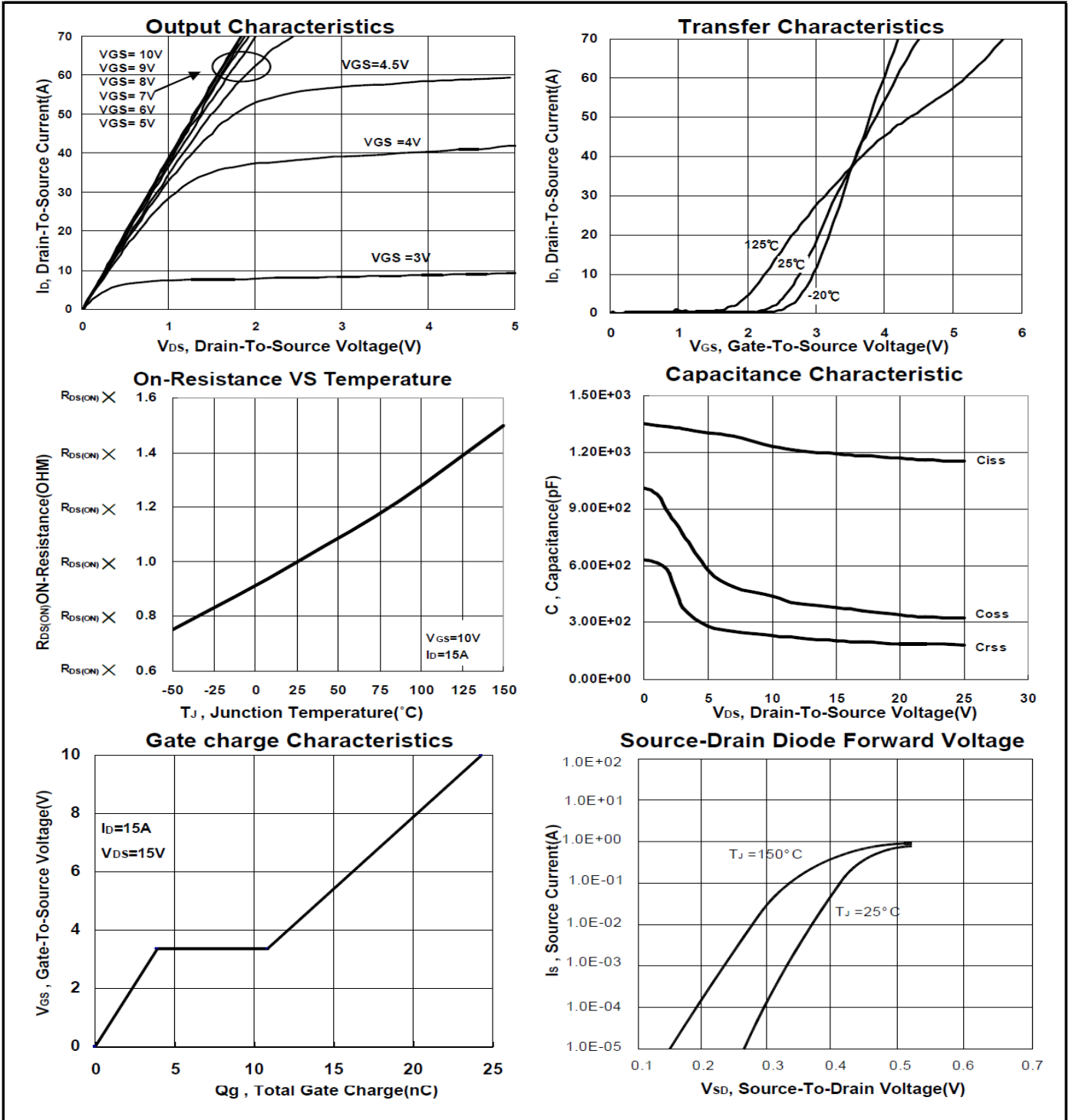
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1	1.5	2.5	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V			0.1	mA
		V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 125 °C			10	
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 15A		12	14.2	mΩ
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 15A		8	9.5	
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 15A		40		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz		1180		pF
Output Capacitance	C <sub>oss</sub>			330		
Reverse Transfer Capacitance	C <sub>rss</sub>			185		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		1.45		Ω
Total Gate Charge <sup>2</sup>	Q <sub>g</sub> (V <sub>GS</sub> =10V)	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 15A		25		nC
	Q <sub>g</sub> (V <sub>GS</sub> =4.5V)			13		
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			4		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			7		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>		V <sub>DD</sub> = 30V, I <sub>D</sub> ≅ 15A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 3Ω		7	
Rise Time <sup>2</sup>	t <sub>r</sub>			10		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			22		
Fall Time <sup>2</sup>	t <sub>f</sub>			6		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current	I <sub>S</sub>				3.125	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 1A, V <sub>GS</sub> = 0V		0.5	0.7	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 15A, di/dt = 100A / μS		33.6		nS
Reverse Recovery Charge	Q <sub>rr</sub>				18	

<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

# PD0903BV

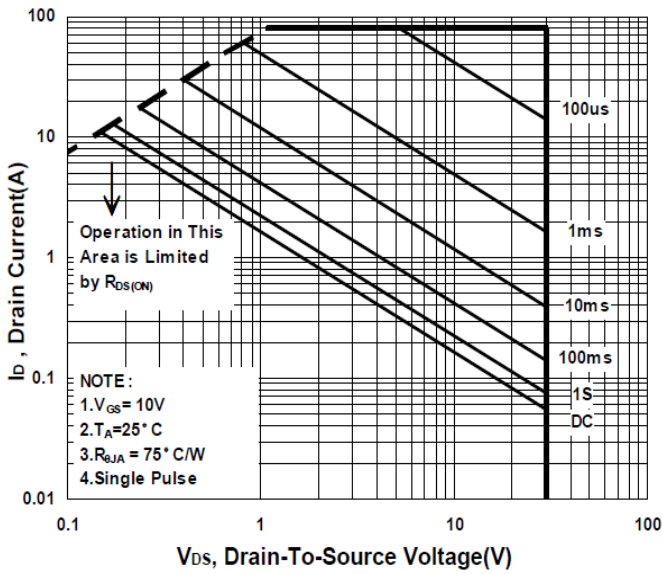
## N-Channel Enhancement Mode MOSFET



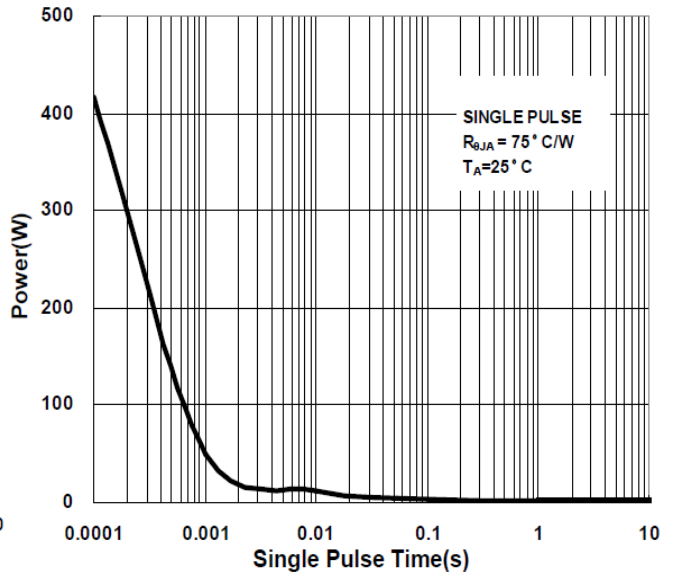
# PD0903BV

## N-Channel Enhancement Mode MOSFET

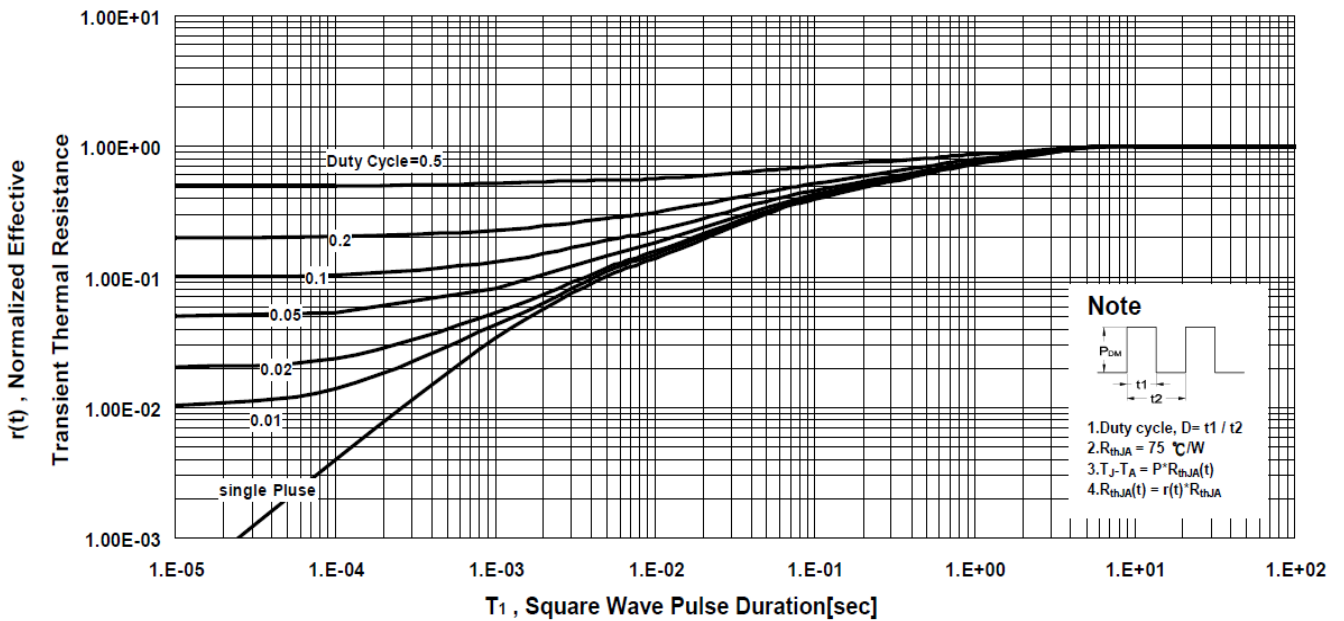
**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**



# PD0903BV

## N-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				

