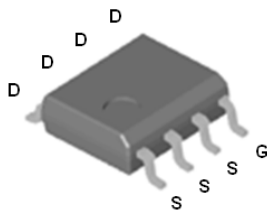


# P0603BV

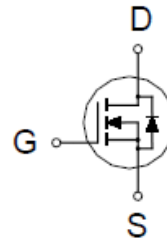
## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	$6m\Omega @ V_{GS} = 10V$	16A



SOP- 08



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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS	
Drain-Source Voltage	$V_{DS}$	30	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_A = 25\text{ }^\circ\text{C}$	16	A
		$T_A = 70\text{ }^\circ\text{C}$	13	
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	70		
Avalanche Current	$I_{AS}$	48		
Avalanche Energy	$E_{AS}$	113	mJ	
Power Dissipation	$P_D$	$T_A = 25\text{ }^\circ\text{C}$	2.5	W
		$T_A = 70\text{ }^\circ\text{C}$	1.6	
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	$R_{\theta JA}$		50	$^\circ\text{C} / \text{W}$

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

# P0603BV

## N-Channel Enhancement Mode MOSFET

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

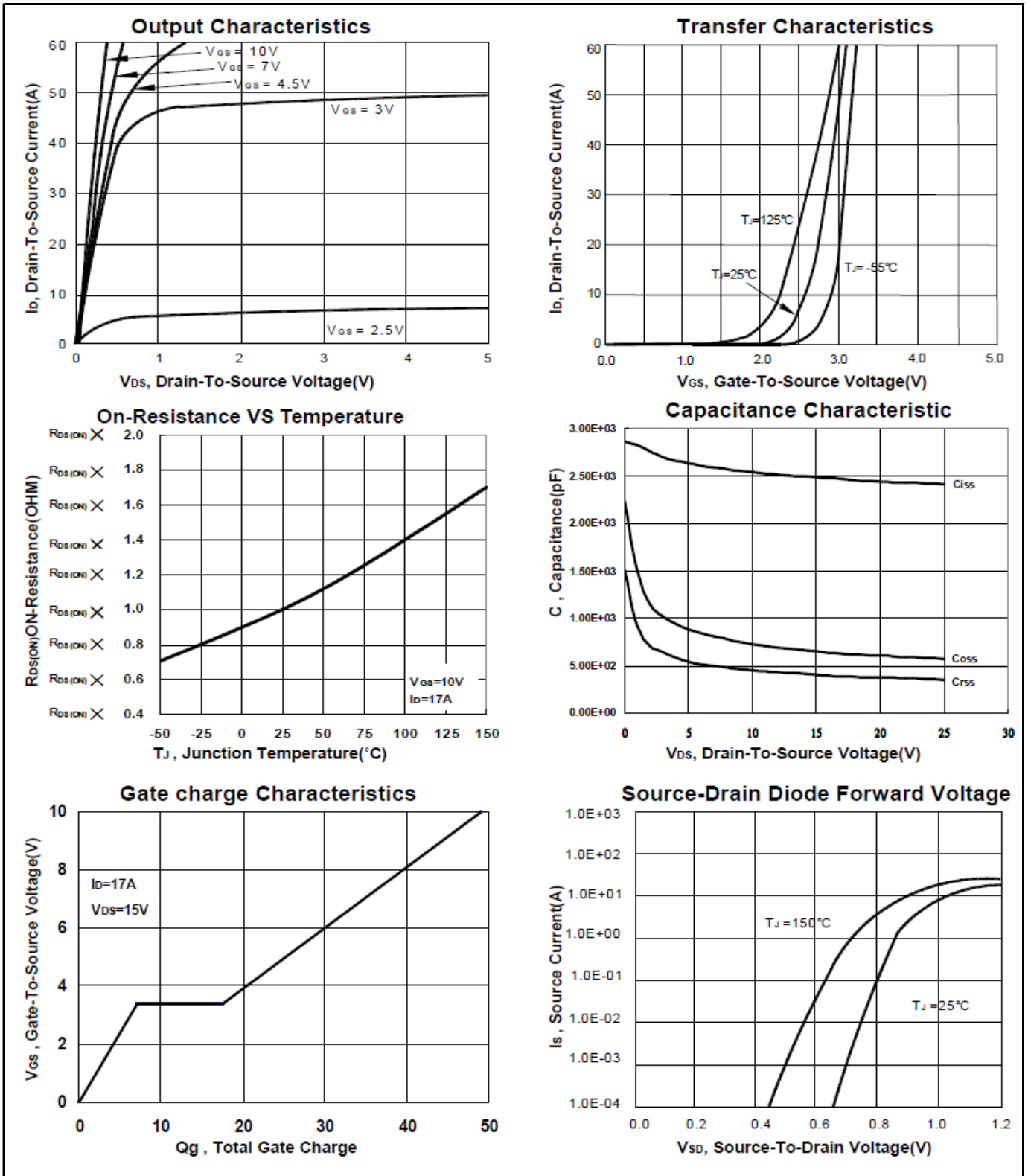
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT	
			MIN	TYP	MAX		
<b>STATIC</b>							
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V	
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1	1.6	3.0		
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			1	μA	
		V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 55 °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> = 14A		6.2	12	mΩ	
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 17A		4.6	6		
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 17A		80		S	
<b>DYNAMIC</b>							
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz		2410		pF	
Output Capacitance	C <sub>oss</sub>			567			
Reverse Transfer Capacitance	C <sub>rss</sub>			351			
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		1.3		Ω	
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>GS</sub> =10V	V <sub>DS</sub> = 0.5V <sub>(BR)DSS</sub> , V <sub>GS</sub> = 10V, I <sub>D</sub> = 17A	50		nC	
		V <sub>GS</sub> =4.5V		25			
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>	7					
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>	10					
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	V <sub>DS</sub> = 15V, R <sub>L</sub> = 15Ω I <sub>D</sub> ≅ 1A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω		10			nS
Rise Time <sup>2</sup>	t <sub>r</sub>			9			
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>		45				
Fall Time <sup>2</sup>	t <sub>f</sub>		10				
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>A</sub> = 25 °C)</b>							
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 17A, V <sub>GS</sub> = 0V			1.2	V	
Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 17A, di/dt=300A/μs			43	nS	
Diode Reverse Recovery Charge	Q <sub>rr</sub>				32	nC	

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

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

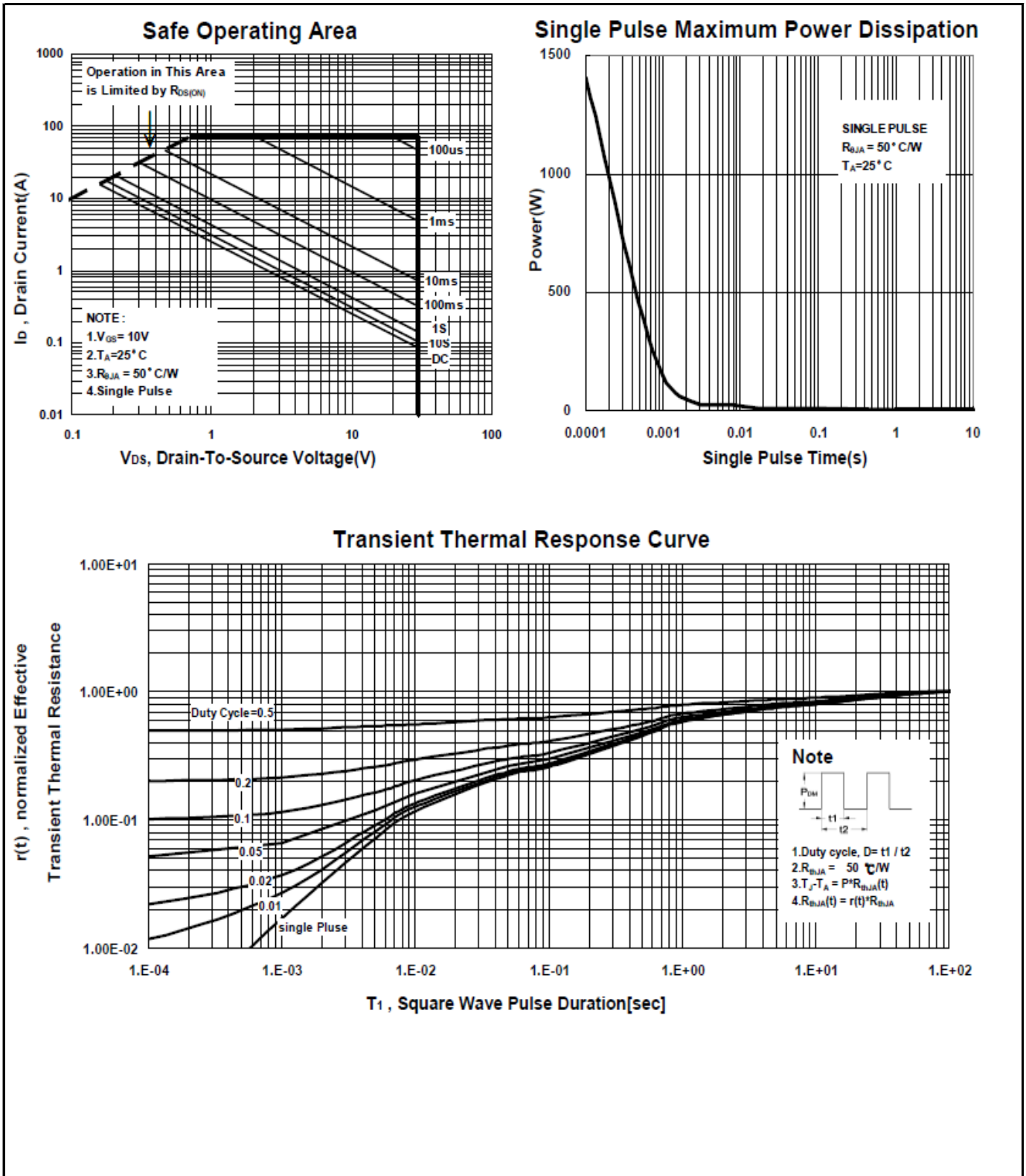
# P0603BV

## N-Channel Enhancement Mode MOSFET



# P0603BV

## N-Channel Enhancement Mode MOSFET



**P0603BV**  
**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				

