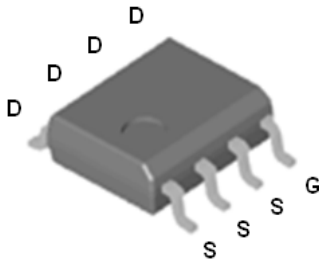


# P2003BVG

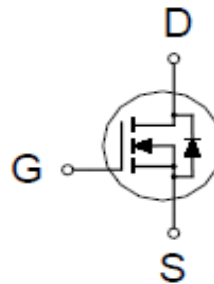
## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	20mΩ @ $V_{GS} = 10V$	9A



SOP-8



100% Rg tested  
100% UIS tested

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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS	
Drain-Source Voltage	$V_{DS}$	30	V	
Gate-Source Voltage	$V_{GS}$	±25		
Continuous Drain Current	$I_D$	$T_A = 25\text{ °C}$	9	A
		$T_A = 70\text{ °C}$	7	
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	32		
Avalanche Current	$I_{AS}$	18.5		
Avalanche Energy	$E_{AS}$	17	mJ	
Power Dissipation	$P_D$	$T_A = 25\text{ °C}$	2.5	W
		$T_A = 70\text{ °C}$	1.6	
Junction & Storage Temperature Range	$T_j, T_{stg}$	-55 to 150	°C	

### THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		50	°C / W

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

## P2003BVG

### N-Channel Enhancement Mode MOSFET

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

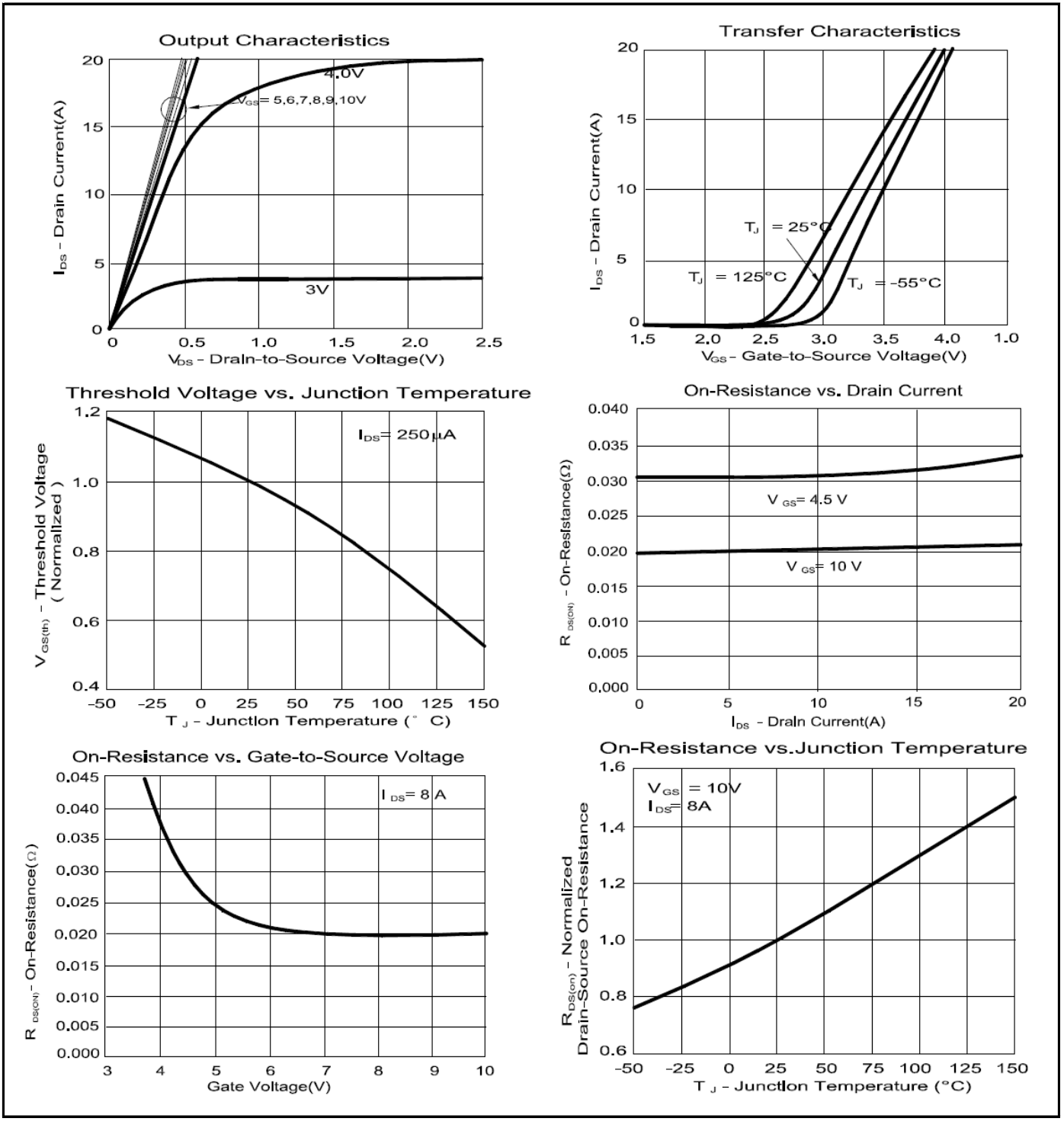
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1	1.7	2.5	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±25V			±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	
On-State Drain Current <sup>1</sup>	I <sub>D(ON)</sub>	V <sub>DS</sub> = 5V, V <sub>GS</sub> = 10V	32			A
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6A		26	31	mΩ
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 8A		18.4	20	
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 15V, I <sub>D</sub> = 8A		16		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz		524		pF
Output Capacitance	C <sub>oss</sub>			132		
Reverse Transfer Capacitance	C <sub>rss</sub>			62		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		2.2		Ω
Total Gate Charge <sup>2</sup>	Q <sub>g</sub> (V <sub>GS</sub> =10V)	V <sub>DS</sub> = 15V, I <sub>D</sub> = 8A		9.7		nC
	Q <sub>g</sub> (V <sub>GS</sub> =4.5V)			4.5		
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			1.5		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			2.3		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>		V <sub>DD</sub> = 15V, I <sub>D</sub> ≅ 1A, V <sub>GEN</sub> = 10V, R <sub>G</sub> = 0.2Ω		11	
Rise Time <sup>2</sup>	t <sub>r</sub>			17		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			37		
Fall Time <sup>2</sup>	t <sub>f</sub>			20		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current	I <sub>S</sub>				2.5	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 8A, V <sub>GS</sub> = 0V			1	V

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

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

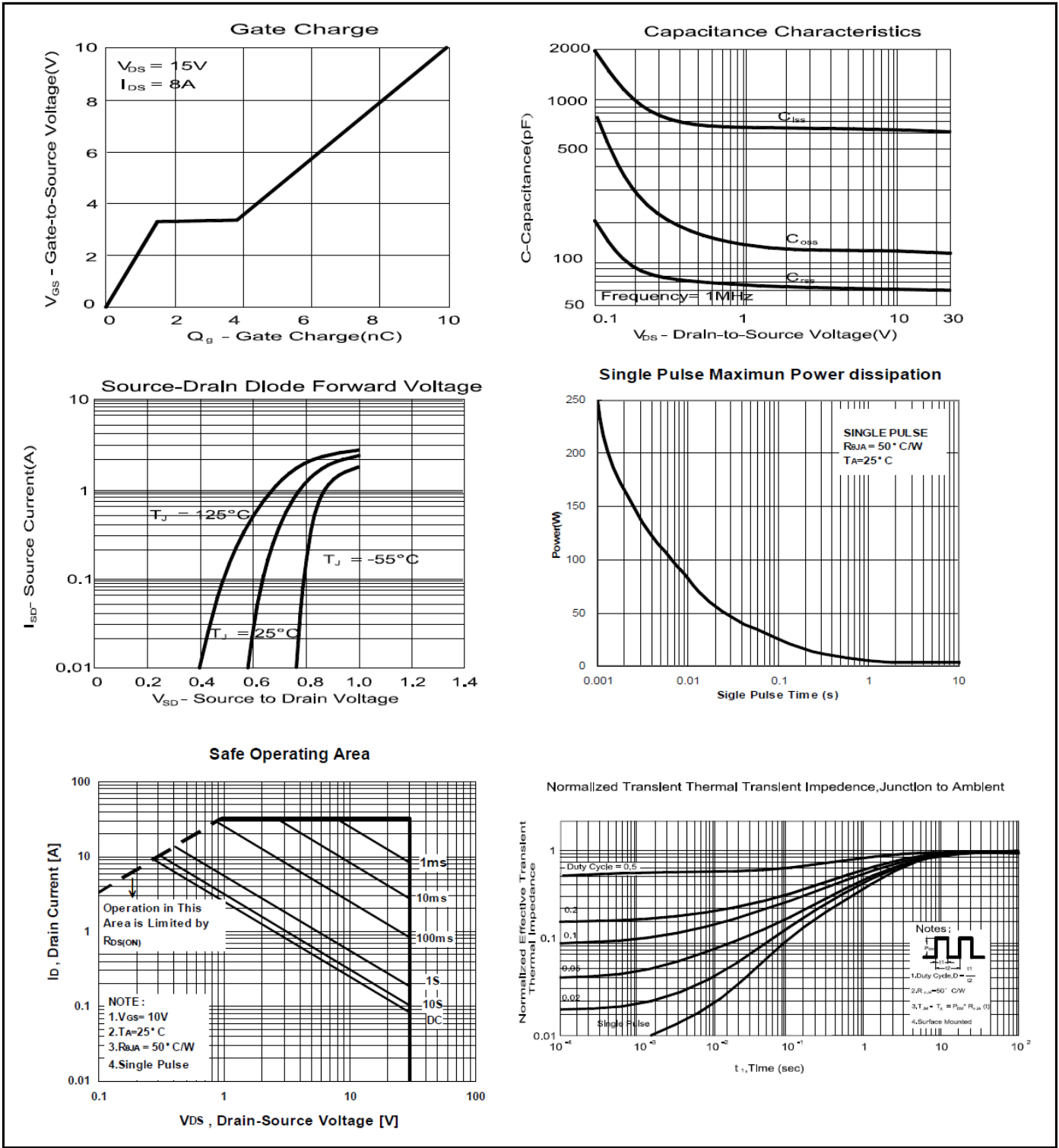
# P2003BVG

## N-Channel Enhancement Mode MOSFET



# P2003BVG

## N-Channel Enhancement Mode MOSFET



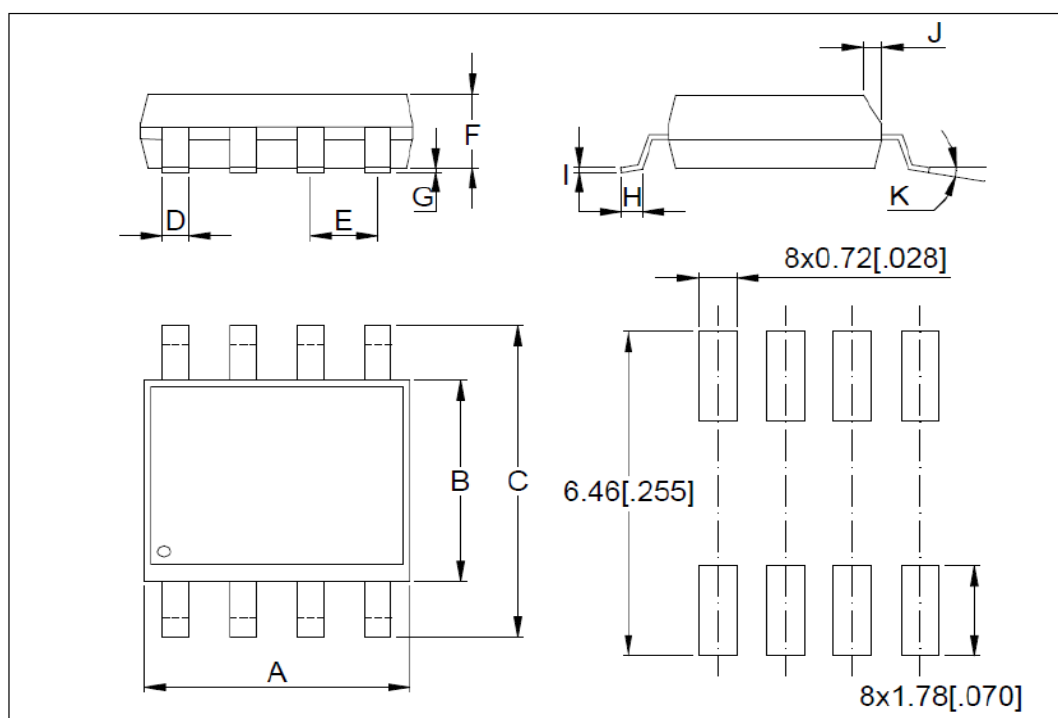
# P2003BVG

## N-Channel Enhancement Mode MOSFET

### Package Dimension

### SOP-8 MECHANICAL DATA

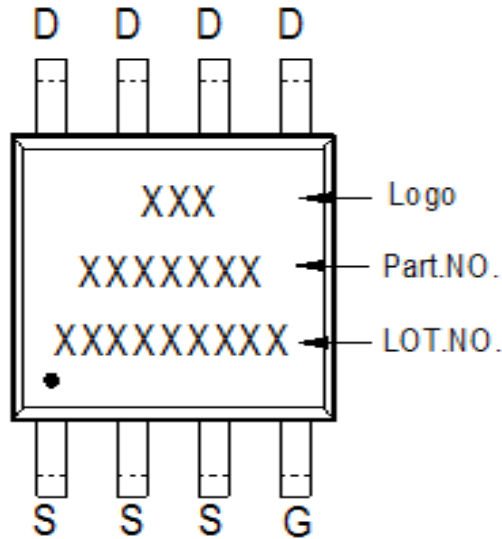
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.4	0.6	0.93
B	3.8	3.9	4.0	I	0.19	0.21	0.25
C	5.79	6.0	6.2	J	0.25	0.375	0.5
D	0.33	0.4	0.51	K	0°	3°	18°
E	1.25	1.27	1.29				
F	1.1	1.3	1.65				
G	0.05	0.15	0.25				



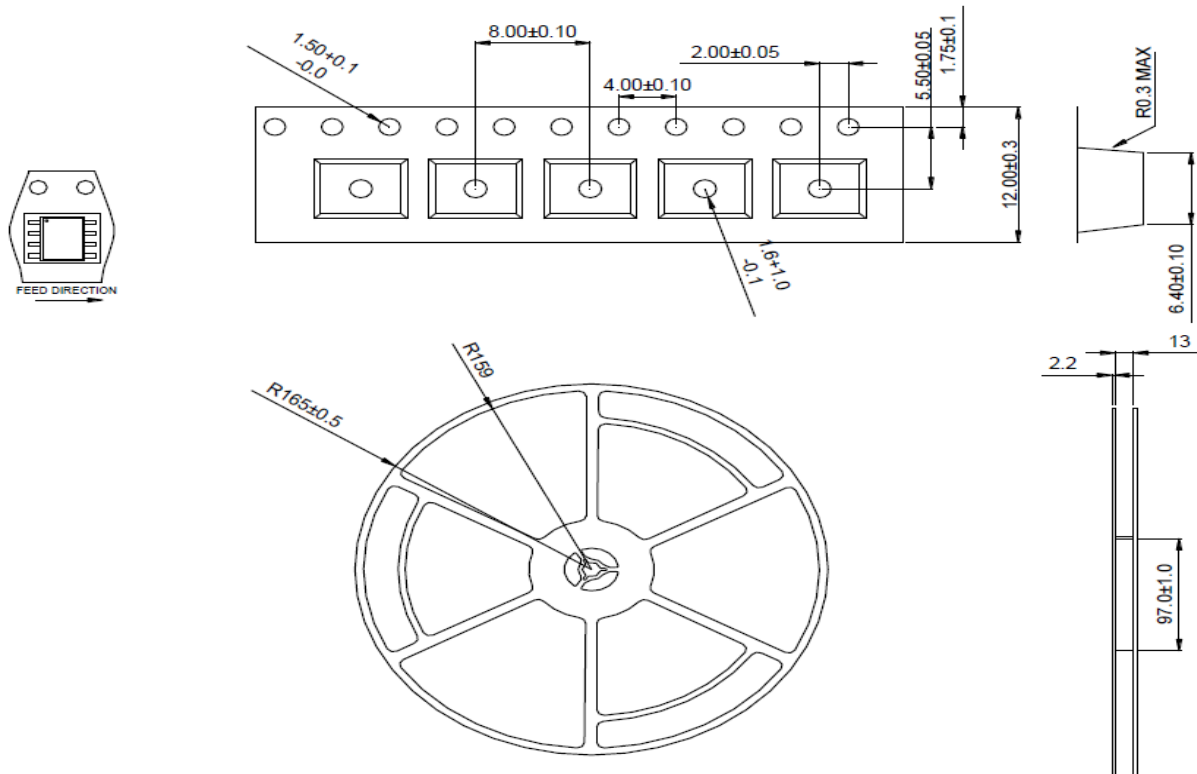
# P2003BVG

## N-Channel Enhancement Mode MOSFET

### A. Marking Information



### B. Tape&Reel Information:2500pcs/Reel



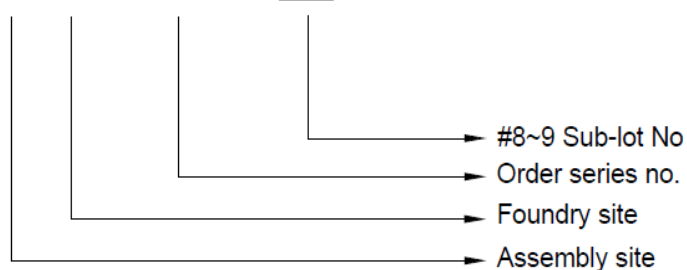
# P2003BVG

## N-Channel Enhancement Mode MOSFET

### C. Lot.No. & Date Code rule

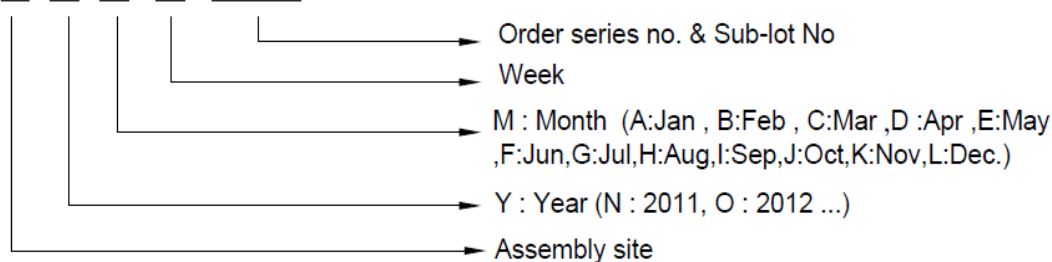
#### 1.LOT.NO.

M N 15M21 03



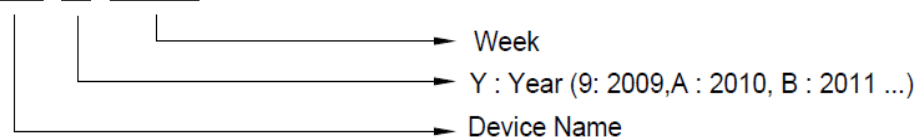
#### 2.Date Code

D Y M X XXX



#### 3.Date Code (for Small package)

XX Y WW





## P2003BVG

### N-Channel Enhancement Mode MOSFET

#### D.Label rule

标签内容(Label content)



1	Label Size	30 * 90 mm
2	Font style	Times New Roman or Arial (或可区分英文"0"和数字"0", "G"和"Q"的字型即可)
3	Great Power	Height: 4 mm
4	Package	Height: 2 mm
5	Date	Height: 2 mm Shipping date: YYYY/MM/DD, ex. 2008/09/12
6	Device	Height: 3 mm (Max: 16 Digit)
7	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
8	D/C	Height: 3 mm (Max: 7 Digit)
9	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
10	Pb Free label	 Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
11	Halogen Free label	 Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
12	Scan info	Device / Lot / D/C / QTY , Insert "/ " between every parts. for example: P3055LDG/G12345601/GGG2301/2000 DPI (Dots per inch): Over 300 dpi Code : Code 128 Height: 6 mm at least