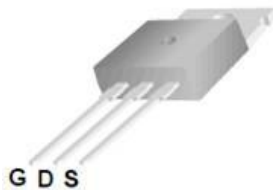


# P2060ZT

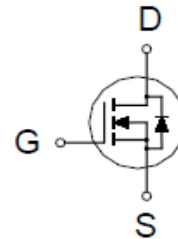
## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
600V	190mΩ @ $V_{GS} = 10V$	20A



TO-220



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		$V_{DS}$	600	V
Gate-Source Voltage		$V_{GS}$	±30	
Continuous Drain Current <sup>2</sup>	$T_C = 25\text{ °C}$	$I_D$	20	A
	$T_C = 100\text{ °C}$		12	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	59	
Avalanche Current <sup>3</sup>		$I_{AS}$	4	
Avalanche Energy <sup>3</sup>		$E_{AS}$	320	mJ
Power Dissipation	$T_C = 25\text{ °C}$	$P_D$	48	W
	$T_C = 100\text{ °C}$		19	
Operating Junction & Storage Temperature Range		$T_J, T_{STG}$	-55 to 150	°C

### THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

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

<sup>2</sup> Ensure that the channel temperature does not exceed 150°C.

<sup>3</sup>  $V_{DD} = 50V$ ,  $L = 40mH$ , starting  $T_J = 25\text{ °C}$ .

# P2060ZT

## 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	600			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2	3.1	4	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±30V			±100	nA
Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 600V, V <sub>GS</sub> = 0V, T <sub>C</sub> = 25 °C			1	μA
		V <sub>DS</sub> = 480V, V <sub>GS</sub> = 0V, T <sub>C</sub> = 100 °C			100	
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 10A		160	190	mΩ
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 10A		15		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 25V, f = 1MHz		1728		pF
Output Capacitance	C <sub>oss</sub>			1096		
Reverse Transfer Capacitance	C <sub>rss</sub>			25		
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>DD</sub> = 50V, I <sub>D</sub> = 10A, V <sub>GS</sub> = 10V		60		nC
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			10		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			29		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	V <sub>DD</sub> = 300V I <sub>D</sub> = 10A, R <sub>G</sub> = 6Ω		56		nS
Rise Time <sup>2</sup>	t <sub>r</sub>			38		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			112		
Fall Time <sup>2</sup>	t <sub>f</sub>			40		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current <sup>3</sup>	I <sub>S</sub>				20	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 10A, V <sub>GS</sub> = 0V			1.5	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 10A, dI <sub>F</sub> /dt = 100A / μS		395		nS
Reverse Recovery Charge	Q <sub>rr</sub>			4.3		nC

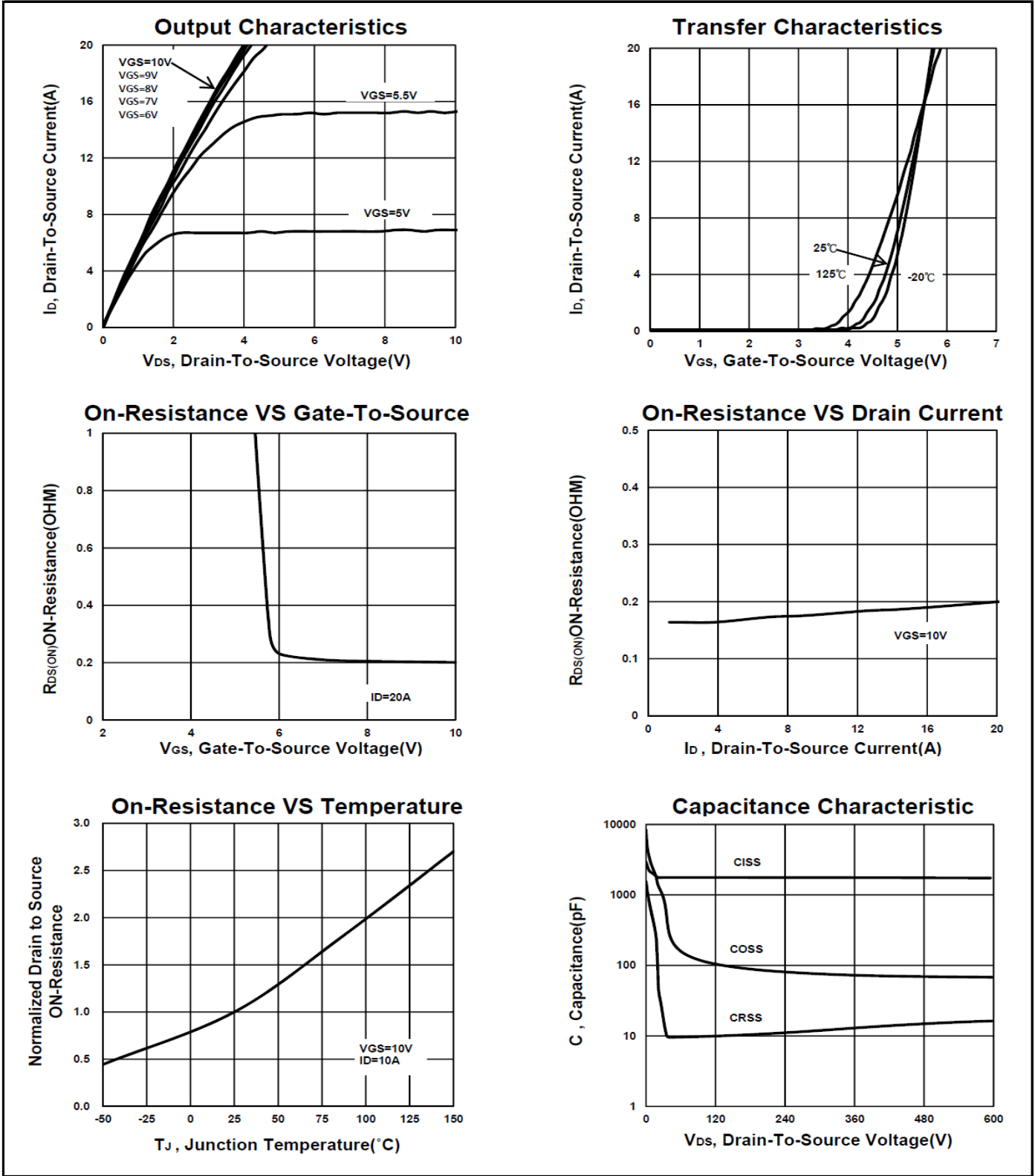
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

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

<sup>3</sup>Pulse width limited by maximum junction temperature.

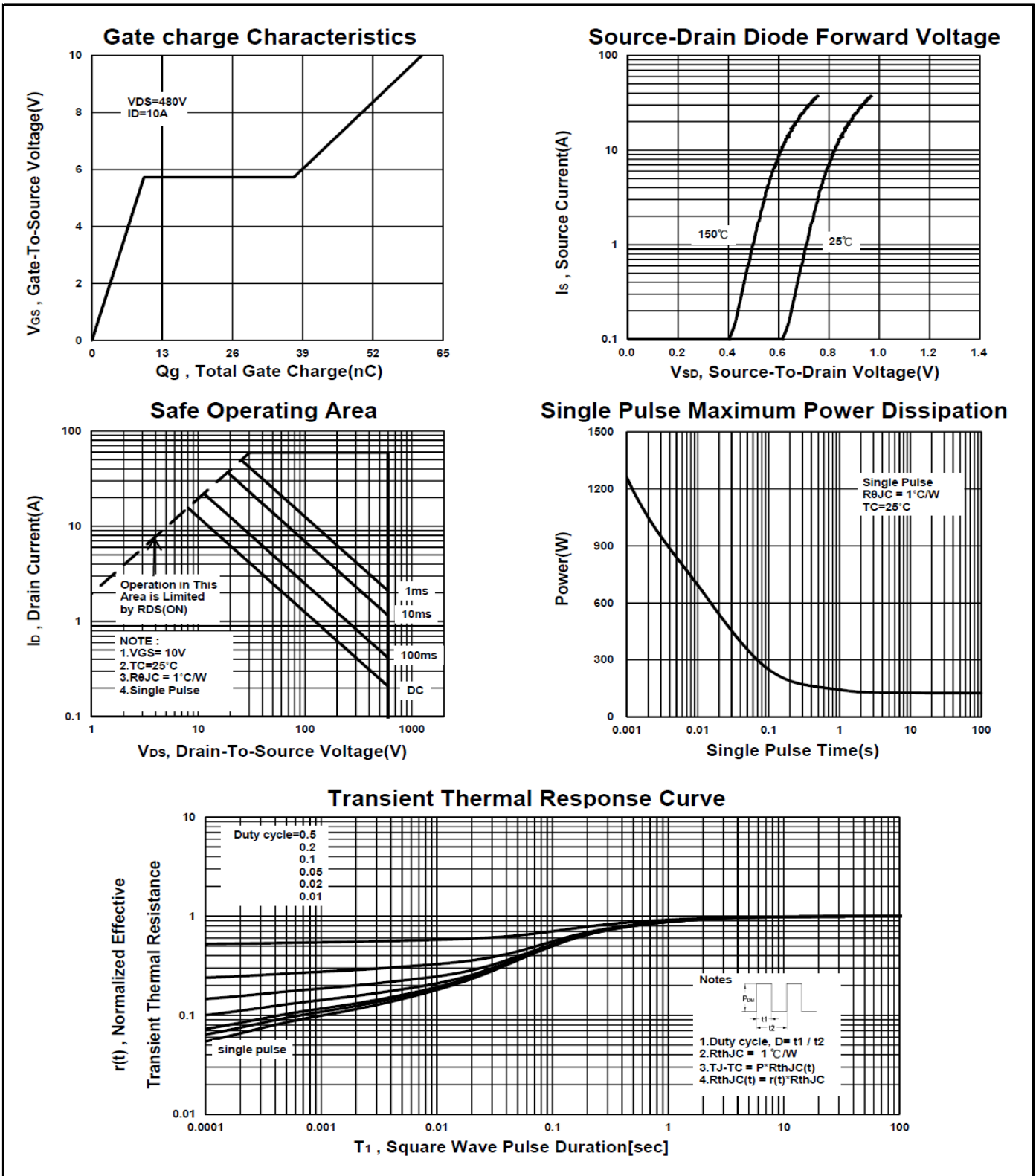
# P2060ZT

## N-Channel Enhancement Mode MOSFET



# P2060ZT

## N-Channel Enhancement Mode MOSFET



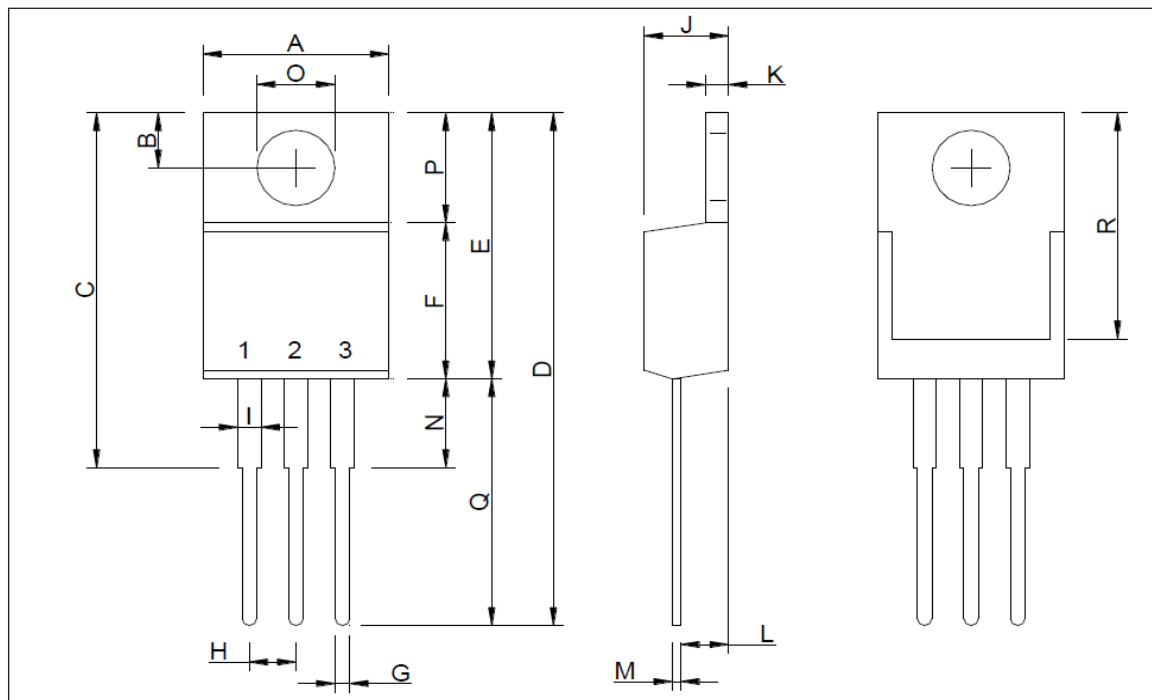
# P2060ZT

## N-Channel Enhancement Mode MOSFET

### Package Dimension

### TO-220 (3-Lead) MECHANICAL DATA

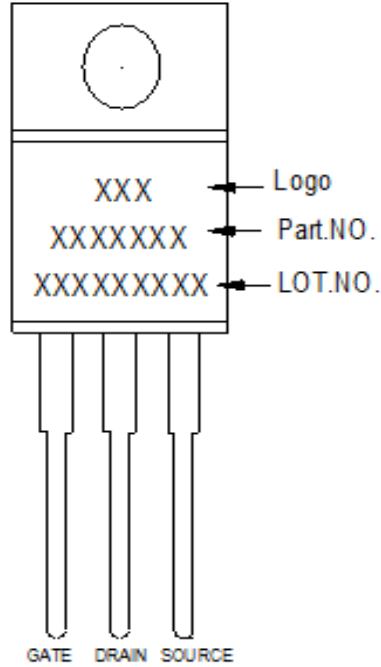
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.65		11.5	J	3.55		4.83
B		2.54		K	1.11		1.45
C	18.1		22.86	L	1.89		3.09
D	26.9		31.24	M	0.34		0.61
E	14.32		16.51	N	2.6		4.06
F	8.38		9.3	O		3.7	
G	0.38		1.02	P	5.84		6.85
H	2.04	2.54	3.04	Q	12.5		14.73
I	1.14		1.8	R	11.3		13.31



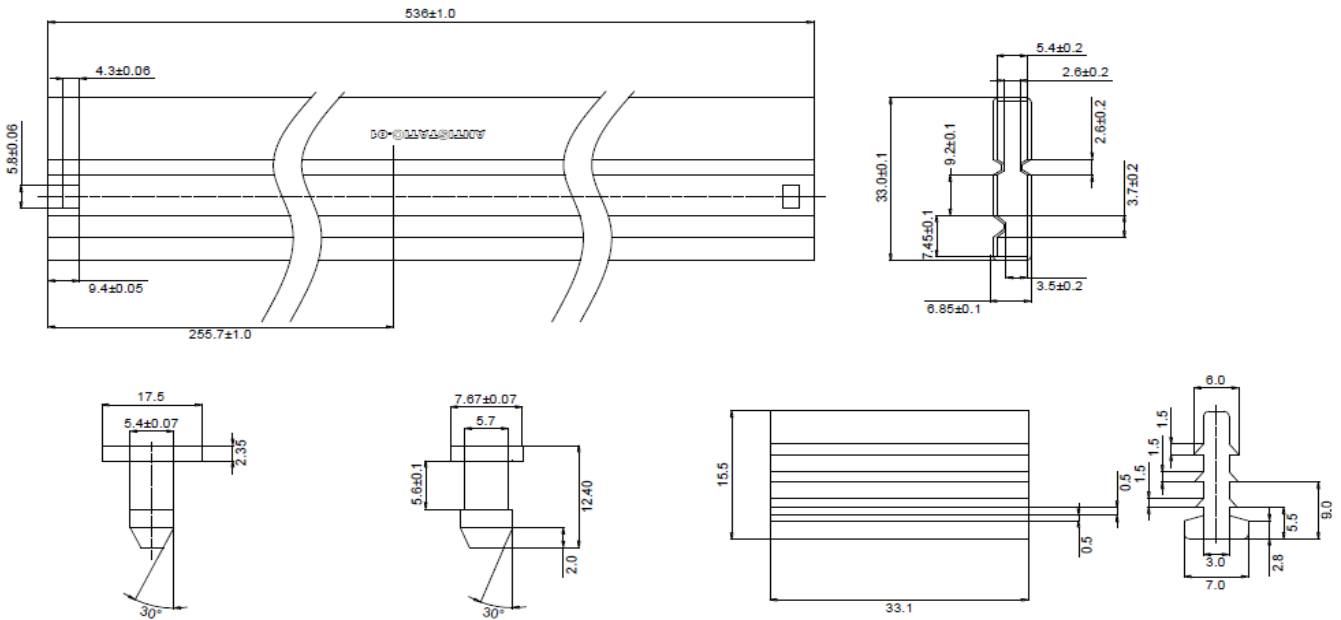
# P2060ZT

## N-Channel Enhancement Mode MOSFET

### A. Marking Information



### B. Tape&Reel Information:50pcs/Tube

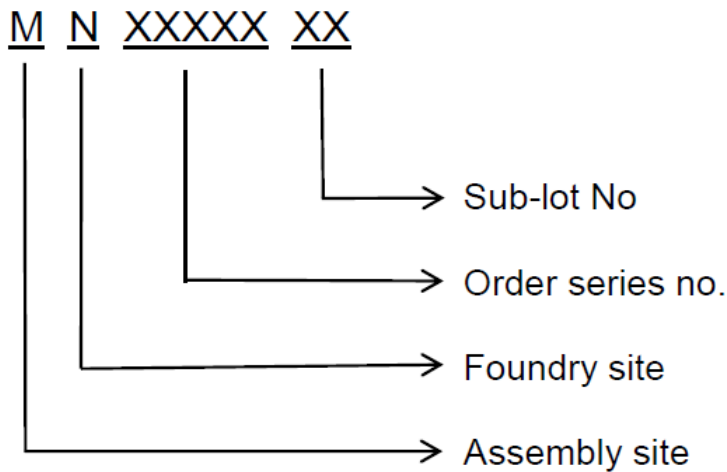


# P2060ZT

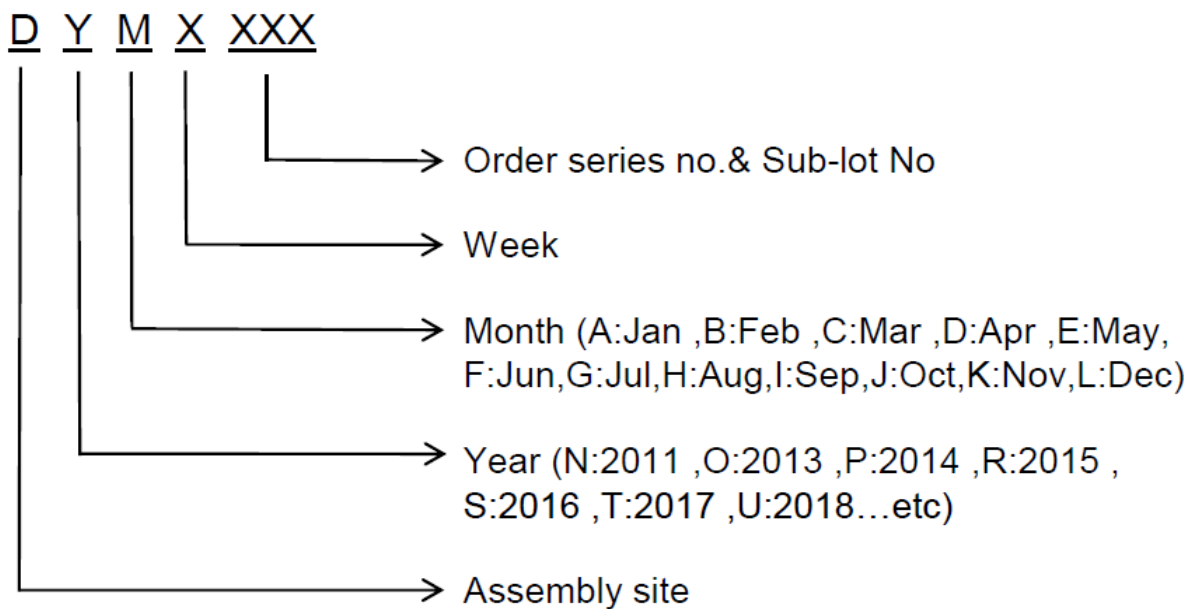
## N-Channel Enhancement Mode MOSFET

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

#### 1.Lot No.



#### 2.Date Code





## P2060ZT

### 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	U-NIKC	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	RoHS label	 long axis: 12 mm minor axis: 6 mm bottom color: White Font color: Black Font style: Arial
11	Halogen Free label	 Diameter: 10 mm bottom color: Green Font color: Black Font style: Arial
12	Scan information	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