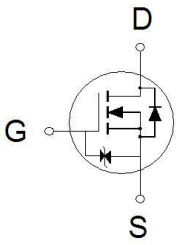
NIKO-SEM

N-Channel Logic Level Enhancement Mode Field Effect Transistor

PW5D8EA
SOT-723
Halogen-Free & Lead-Free

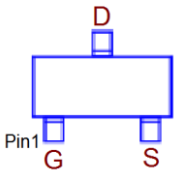
PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	300mΩ	0.8A



Features
- Pb−Free, Halogen Free and RoHS compliant.
- Low $R_{DS(on)}$ to Minimize Conduction Losses.
- Ohmic Region Good $R_{DS(on)}$ Ratio.
- Optimized Gate Charge to Minimize Switching Losses.
- ESD Protection - HBM Class : 1C.

Applications
- Protection Circuits Applications.
- Logic/Load Switch Circuits Applications.
- Space Limit & Smart Devices Applications.



G: GATE
D: DRAIN
S: SOURCE

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±10	V
Continuous Drain Current[2]	T_A = 25 °C	I_D	0.8	A
	T_A = 70 °C		0.62	
Pulsed Drain Current[1]		I_{DM}	2.4	A
Power Dissipation	T_A = 25 °C	P_D	0.3	W
	T_A = 70 °C		0.2	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		400	°C / W

[1]Limited by maximum junction temperature.
[2]Limited by package.

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

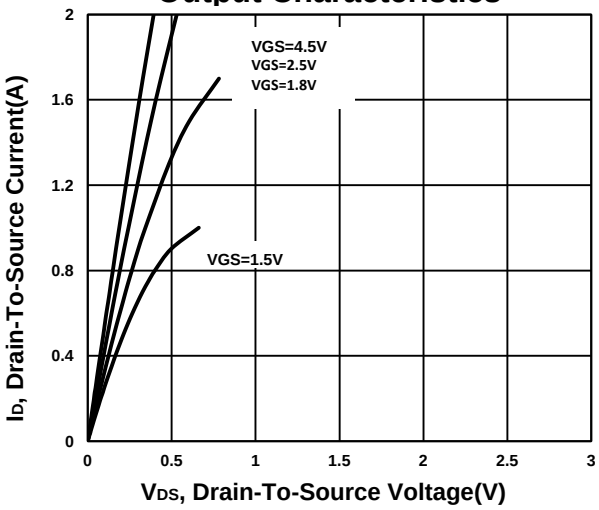
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	0.4	0.63	1	

Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±8V			±30	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V			1	μA
		V_{DS} = 10V, V_{GS} = 0V, T_J = 125 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 0.5A		177	300	mΩ
		V_{GS} = 2.5V, I_D = 0.25A		226	400	
		V_{GS} = 1.8V, I_D = 0.2A		300	700	
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 0.5A		5		S

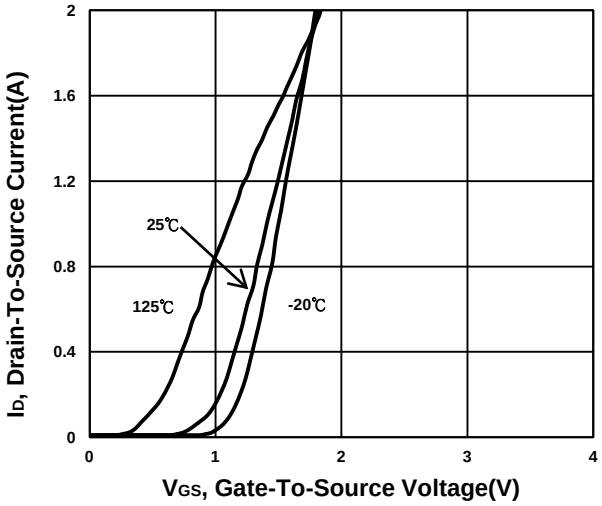
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 10V, f = 1MHz		60		pF
Output Capacitance	C_{oss}			19		
Reverse Transfer Capacitance	C_{rss}			10		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 10V , $I_D \cong$ 0.5A , V_{GS} = 4.5V, R_{GEN} = 5.1Ω		17		nS
Rise Time[2]	t_r			36		
Turn-Off Delay Time[2]	$t_{d(off)}$			86		
Fall Time[2]	t_f			173		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				0.25	A
Forward Voltage[1]	V_{SD}	I_F = 0.5A, V_{GS} = 0V			1.2	V
Reverse Recovery Time	t_{rr}	I_F = 1A, dI/dt = 100 A/μs		111		nS
Reverse Recovery Charge	Q_{rr}			102		uC

[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.
[2]Independent of operating temperature.

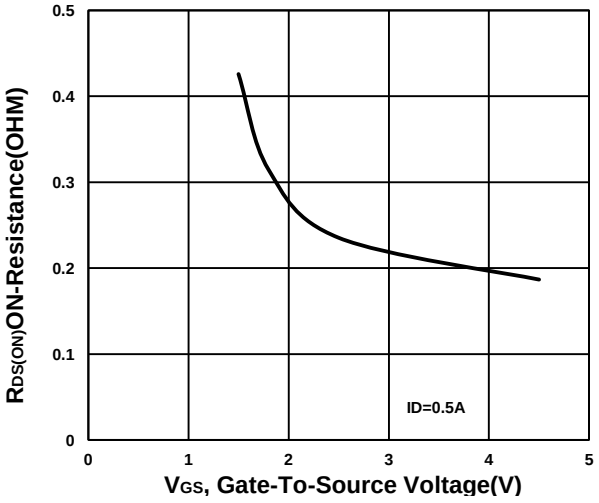
Output Characteristics



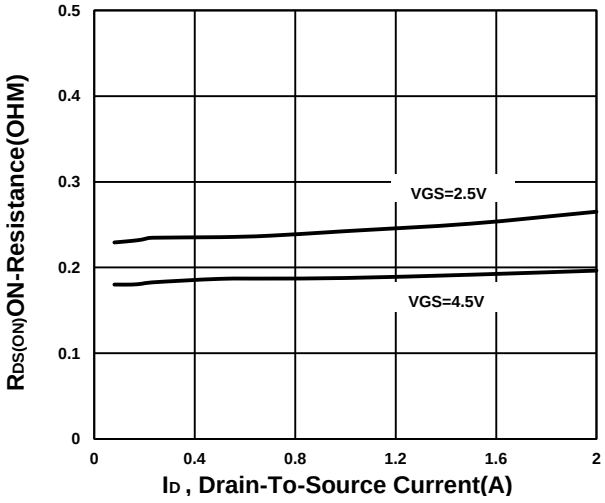
Transfer Characteristics



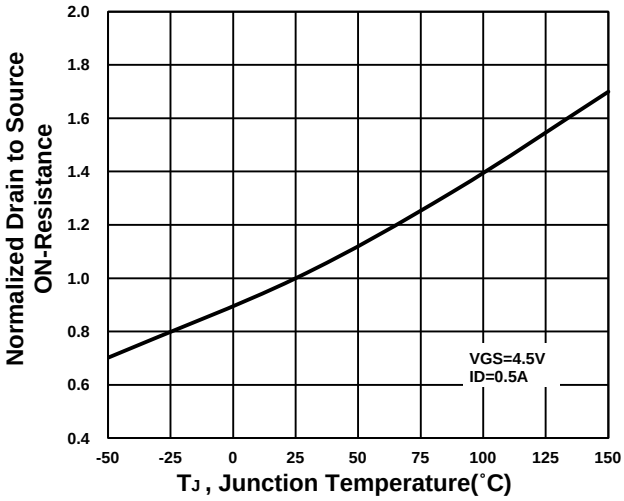
On-Resistance VS Gate-To-Source



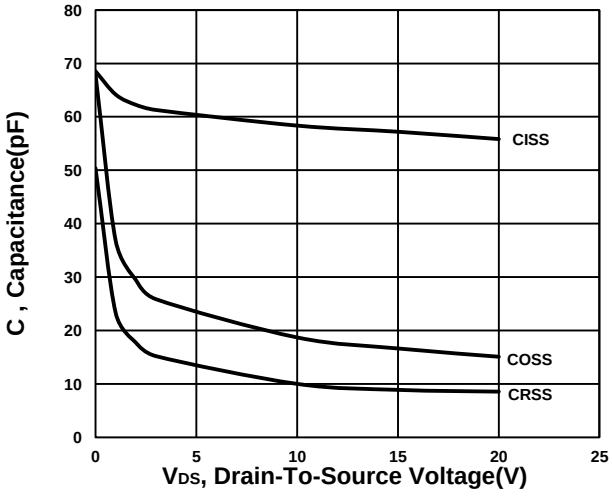
On-Resistance VS Drain Current



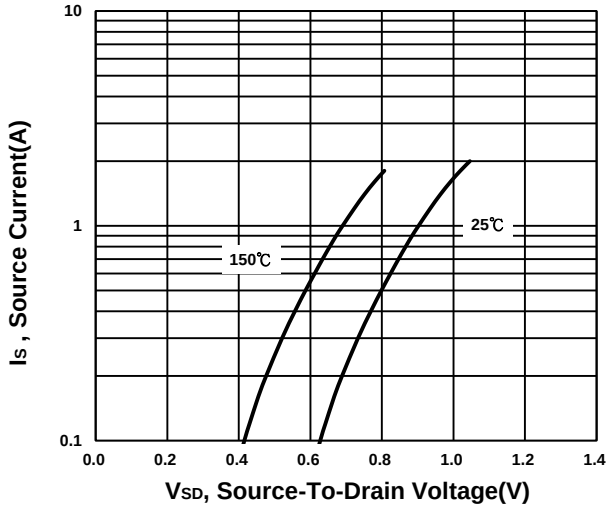
On-Resistance VS Temperature



Capacitance Characteristic



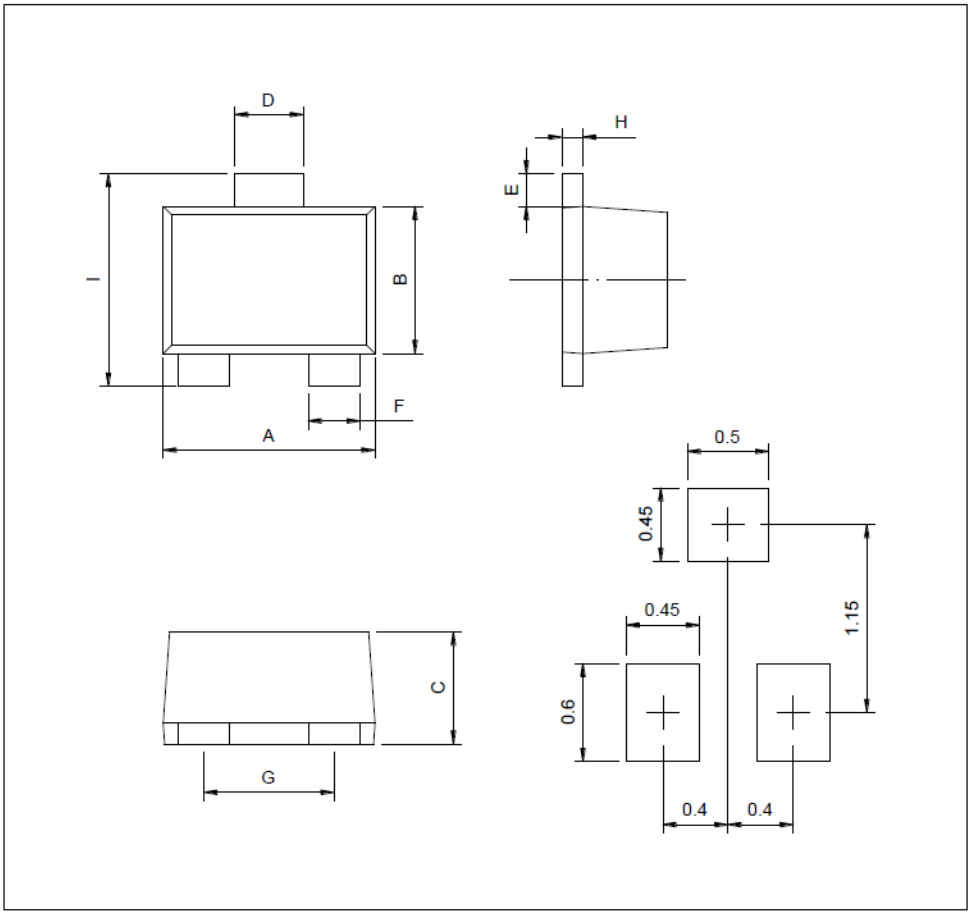
Source-Drain Diode Forward Voltage



Package Dimension

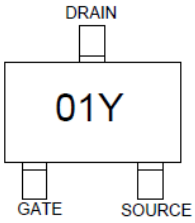
SOT-723 MECHANICAL DATA

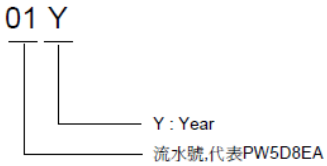
Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	1.10		1.30	H	0.10Typical		
B	0.70		0.90	I	1.10		1.30
C	0.54Max						
D	0.22		0.42				
E	0.10		0.30				
F	0.12		0.32				
G	0.80Typical						



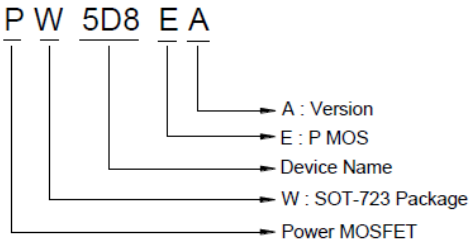
A. Marking Information

1.零件Marking 文字面說明

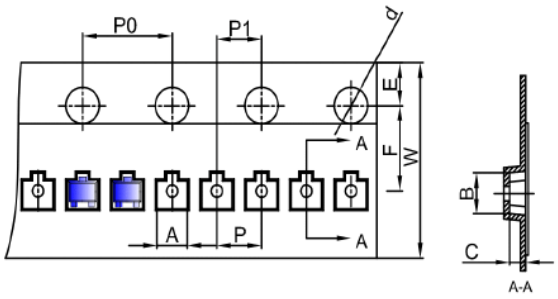


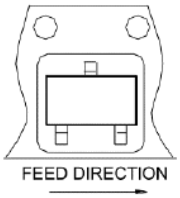


2.零件Part number說明

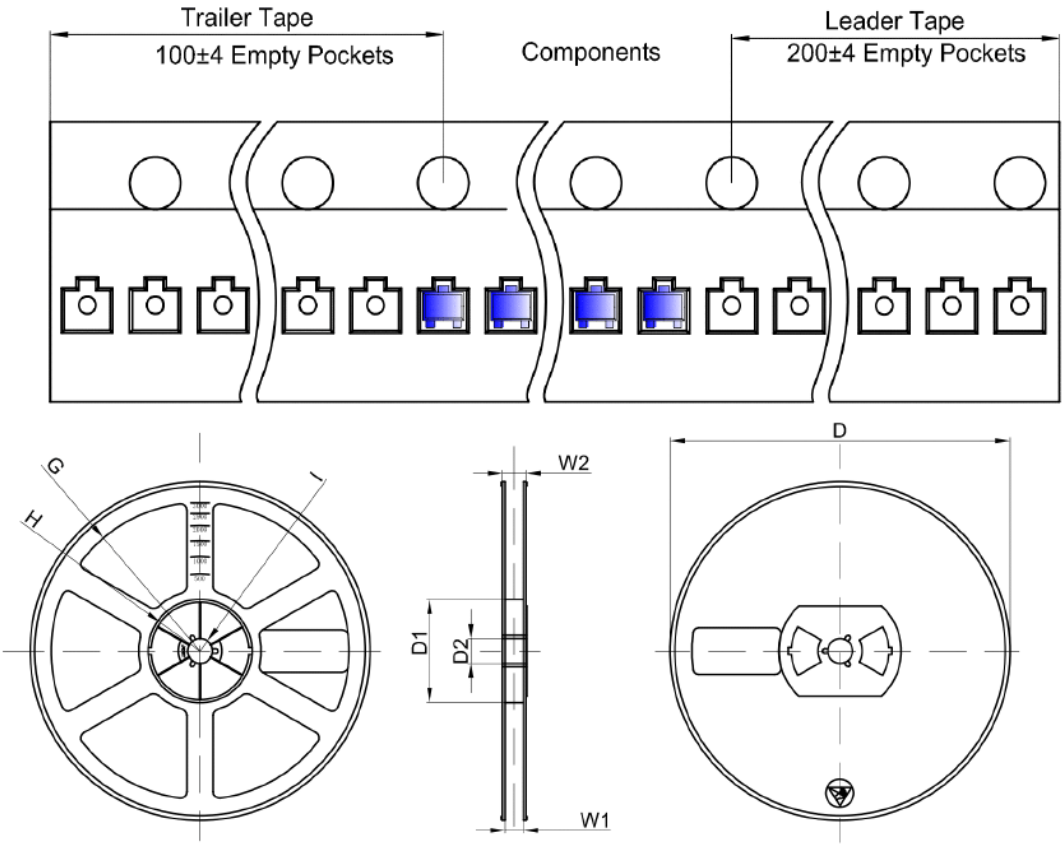


B. Tape&Reel Information:8000pcs/Reel





Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-723	1.33	1.45	0.61	Ø1.50	1.75	3.50	4.00	2.00	2.00	8.00
(Tolerance)	+/-0.05	+/-0.05	+/-0.05	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+0.3/-0.1



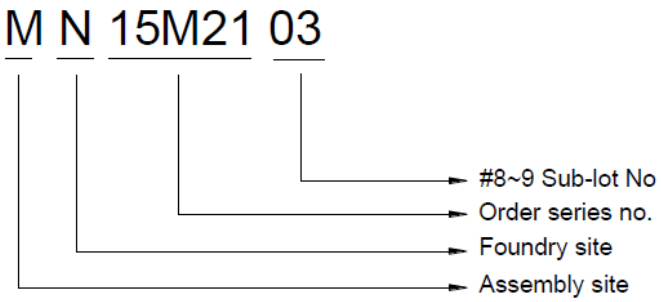
Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1	+/-1

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
8000 pcs	7 inch	120,000 pcs	203×203×195	480,000 pcs	438×438×220	

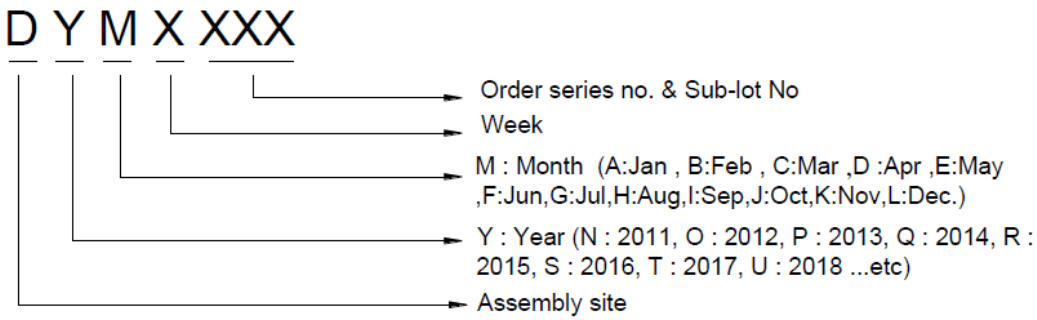
附註:All Dimension in millimeter

C. Lot.No. & Date Code rule

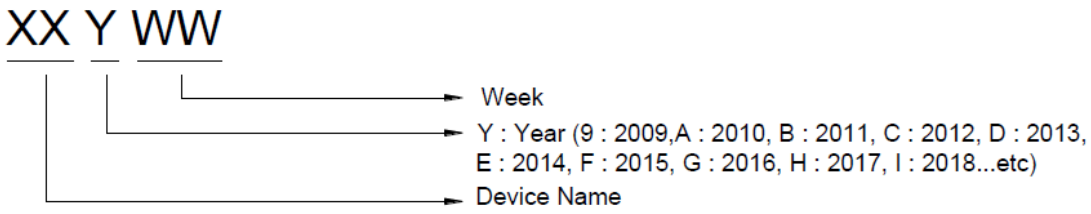
1.LOT.NO.



2.Date Code



3.Date Code (for Small package)



D. Label rule

標籤內容 (Label content)

1	Label Size	30 * 90 mm
2	Font style	Times New Roman or Arial (或可區分英文"O"和數字"0"，"G 和"Q"的字型即可) (Or any font capable of being distinguished for Letter O and digital 0, and for G and Q))
3	NIKO-SEM	Height: 4 mm
4	NIKO SEMICONDUCTOR CO., LTD.	Height: 1 mm
5	Package	Height: 2 mm
6	Date	Height: 2 mm Shipping date: YYYY/MM/DD, ex. 2008/09/12
7	Device	Height: 3 mm (Max: 16 Digit) Device Name not including Rev.
8	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
9	D/C	Height: 3 mm (Max: 7 Digit)
10	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
11	Pb Free label	Pb Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
12	Halogen Free label	G Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial
13	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