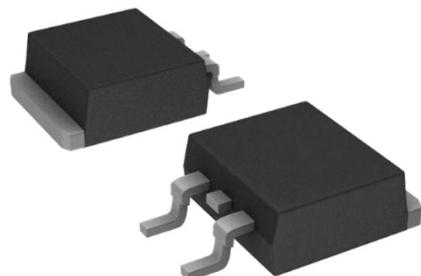
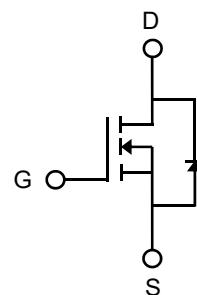
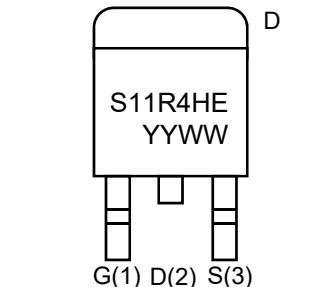


Description

The PSMD2P11R4H uses split gate trench technology to provide excellent $R_{DS(ON)}$ low gate charge. This device is suitable for power management and high efficiency applications at high switching frequencies applications.

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(m\Omega)$	$I_D(A)$
100	4.1@ $V_{GS} = 10V$	165


TO-263 (Top View)

Schematic diagram

Marking (Top View)

Applications

- PWM applications
- Load switch
- Power management
- DC-DC Converters
- Wireless Chargers

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous ¹⁾	I_D	165	A
$T_C=100^\circ C$		105	
Pulsed Drain Current ²⁾	I_{DM}	660	A
Total Power Dissipation ³⁾	P_D	235.8	W
Avalanche Current ⁴⁾	I_{AS}	123	A
Avalanche Energy ⁴⁾	E_{AS}	766	mJ
Thermal Resistance , Junction-case ⁵⁾	$R_{\theta JC}$	0.53	°C/W
Thermal Resistance Junction-to-Ambient ⁶⁾	$R_{\theta JA}$	50.3	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

N-Channel MOSFET

PSMD2P11R4H

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	100	113	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$	-	-	1.0	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0	3.2	4.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 50A$	-	4.1	4.5	$m\Omega$
Dynamic Characteristics⁷⁾						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1.0MHz$	-	5988	-	pF
Output Capacitance	C_{oss}		-	809	-	
Reverse Transfer Capacitance	C_{rss}		-	28	-	
Switching Characteristics⁷⁾						
Turn-on Delay Time	$t_{d(on)}$	$V_{DS} = 50V, V_{GS} = 10V, R_G = 10\Omega, I_D = 15A$	-	44	-	ns
Turn-on Rise Time	t_r		-	70	-	
Turn-Off Delay Time	$t_{d(off)}$		-	125	-	
Turn-Off Fall Time	t_f		-	70	-	
Total Gate Charge	Q_g	$V_{DS} = 50V, V_{GS} = 10V, I_D = 50A$	-	101	-	nC
Gate-Source Charge	Q_{gs}		-	30	-	
Gate-Drain Charge	Q_{gd}		-	27	-	
Gate Resistance	R_g	$V_{GS}=0V, V_{DS}=0V, f=1MHz$	-	2.1	-	Ω
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$	-	0.7	1.4	V

Notes:

1. Computed continuous current assumes the condition of T_{J_Max} while the actual continuous current depends on the thermal & electro-mechanical application board design.
2. Repetitive Rating: Pulse width limited by maximum junction temperature($T_{J_Max}=150^{\circ}C$).
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. This single-pulse measurement was taken under the following condition [$L=100\mu H, V_{GS}=10V, V_{DS}=100V$]while it's value is limited by $T_{J_Max}=150^{\circ}C$
5. Device mounted on infinite heatsink
6. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
7. Guaranteed by design, not subject to production

Typical Characteristics

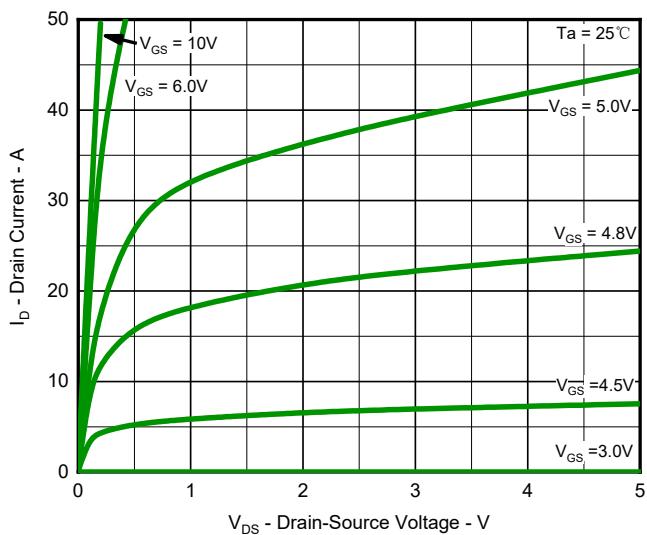


Fig.1 Output Characteristics

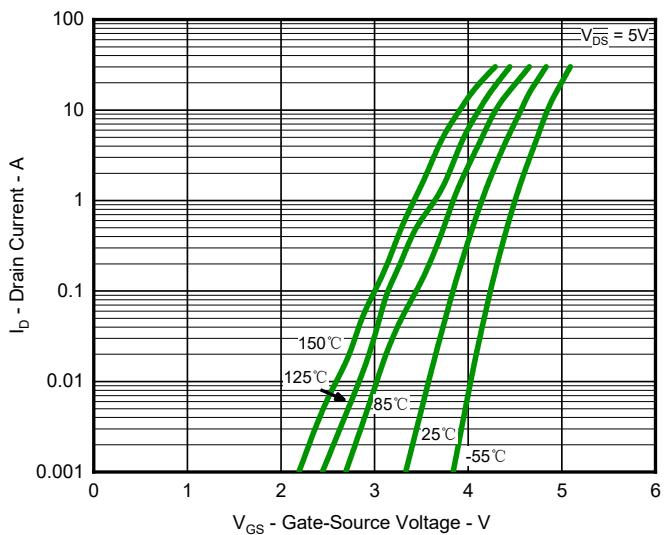


Fig.2 Typical Transfer Characteristic

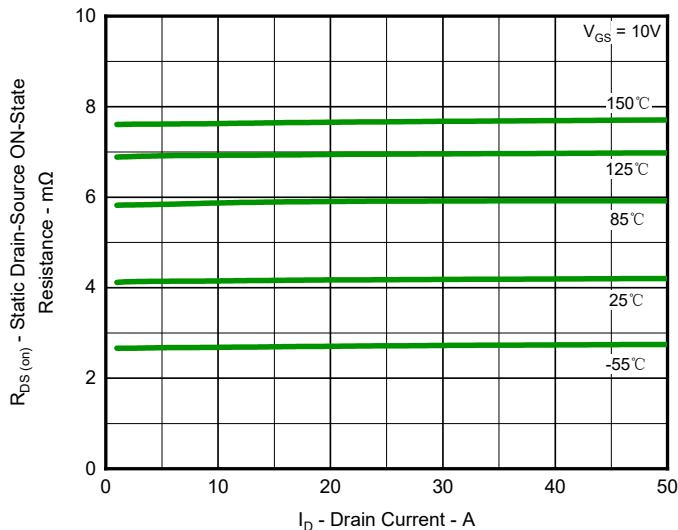


Fig.3 Typical On-Resistance vs. Drain Current and Temperature

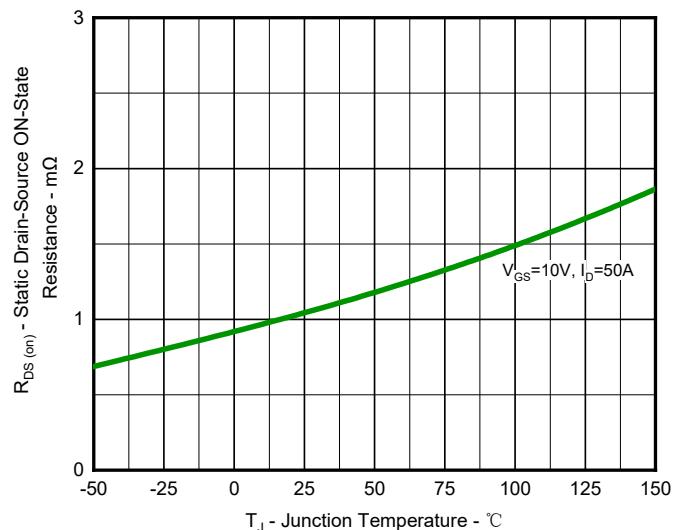


Fig.4 On-Resistance Variation with Temperature

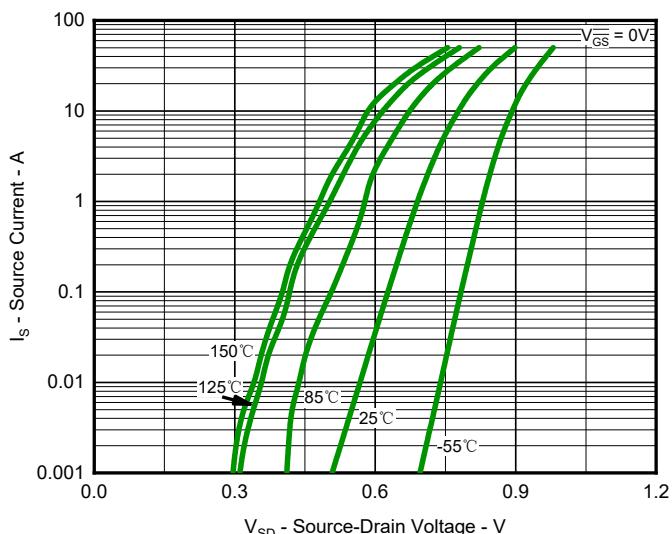


Fig.5 Diode Forward Voltage vs. Current

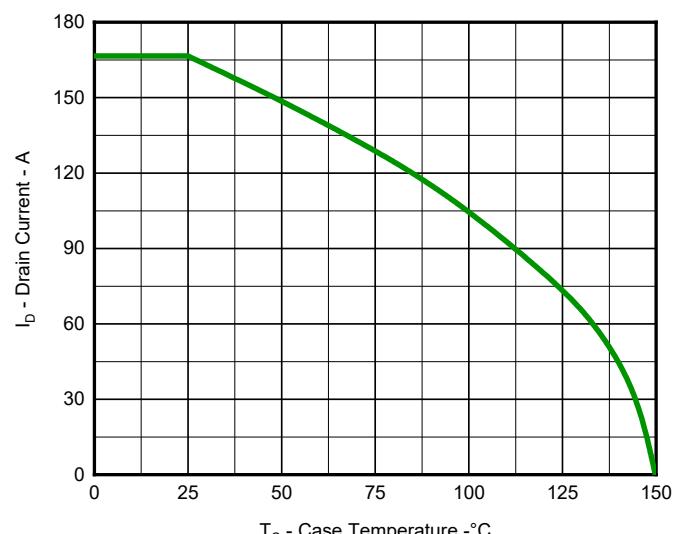


Fig.6 Maximum Drain Current vs. Case Temperature

N-Channel MOSFET

PSMD2P11R4H

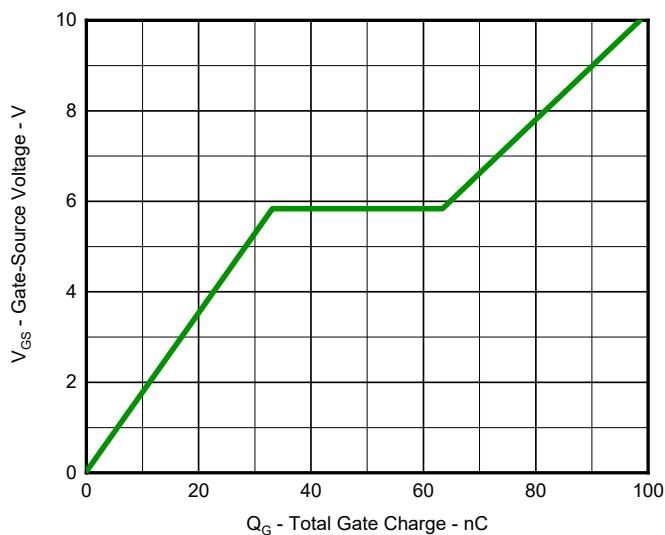


Fig.7 Gate Charge Characteristics

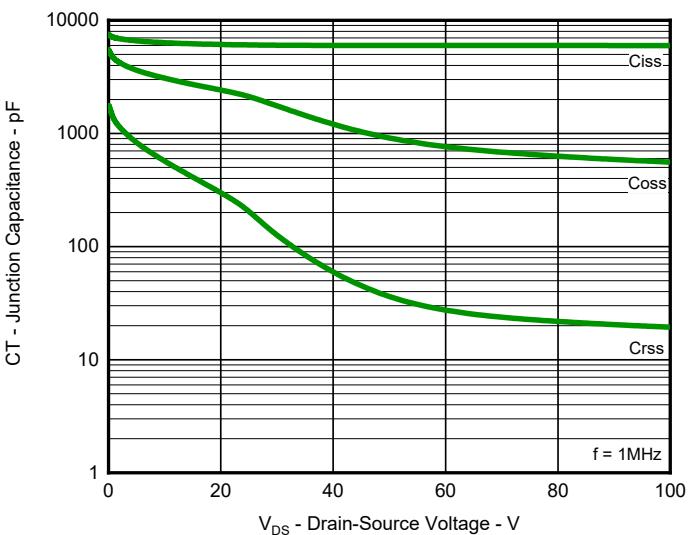


Fig.8 Typical Junction Capacitance

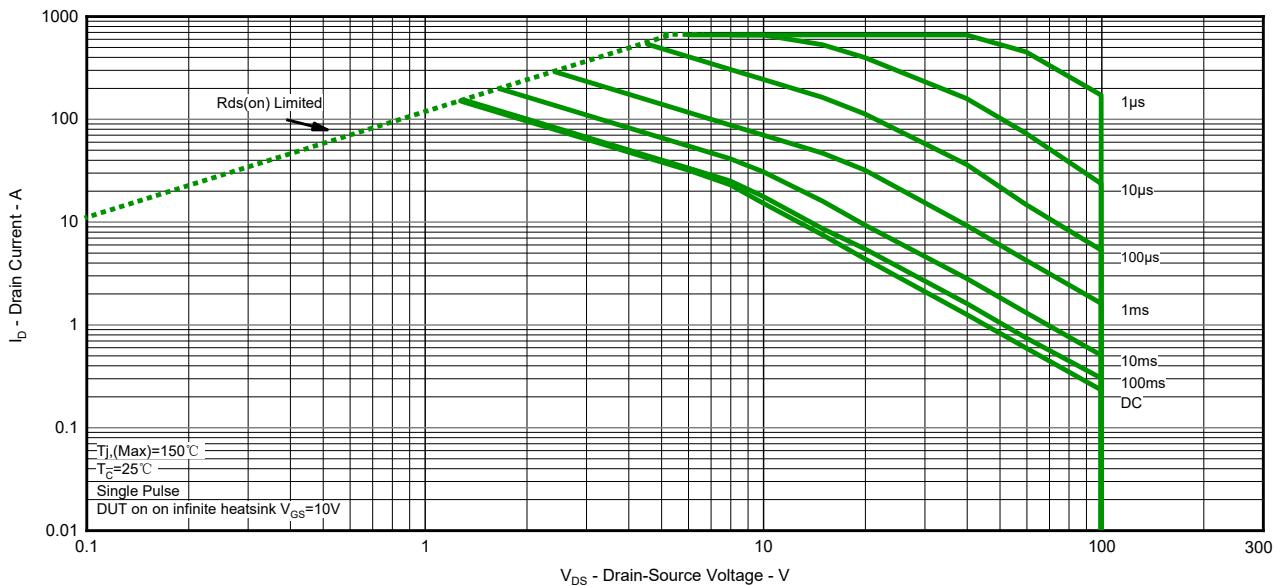


Fig.9 Safe Operation Area

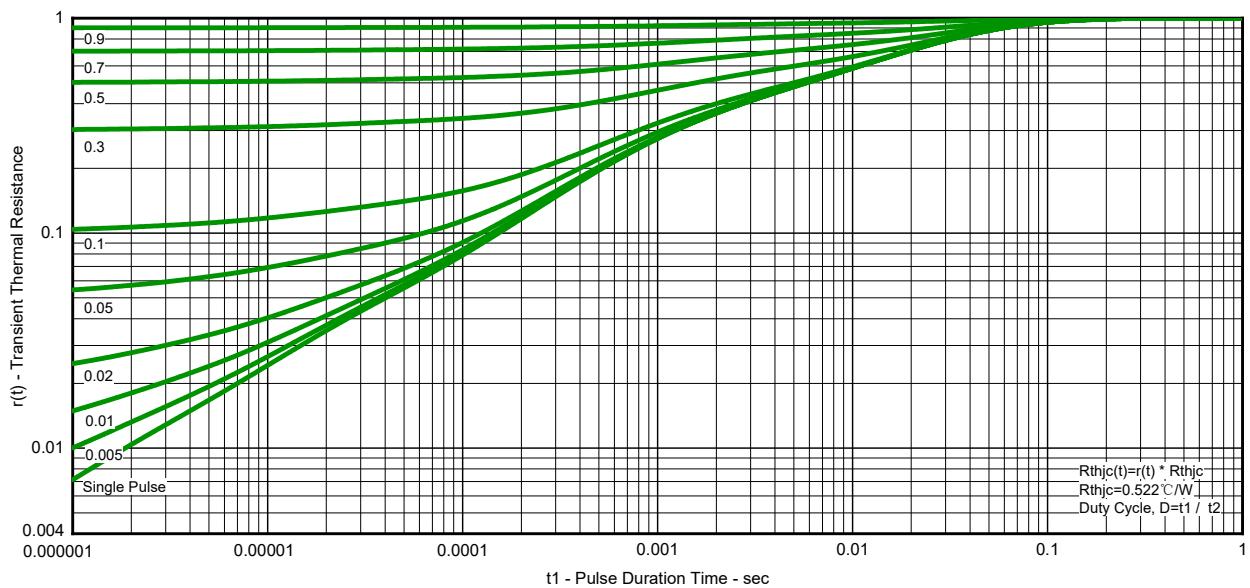
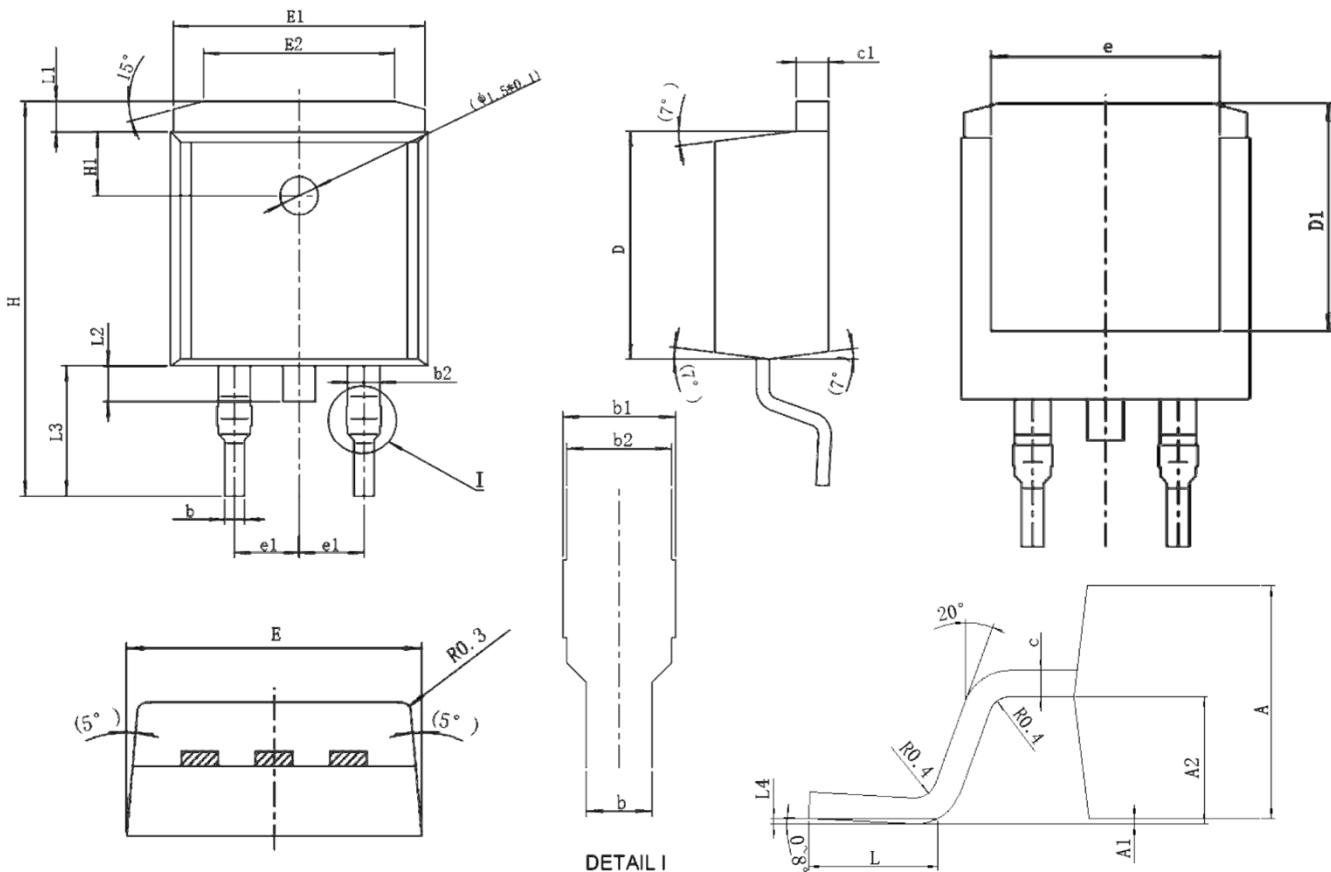


Fig.10 Transient Thermal Resistance

Product dimension (TO-263)



Dim	Millimeters		Inches		Dim	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	4.56	4.58	0.180	0.180	E1	9.85	9.91	0.388	0.390
A1	0.02	0.22	0.001	0.009	E2	7.40	7.60	0.291	0.299
A2	2.34	2.67	0.092	0.105	e	7.50	8.50	0.295	0.335
b	0.75	0.85	0.030	0.033	e1	2.51	2.57	0.099	0.101
b1	1.27	1.47	0.050	0.058	H	15.30	15.70	0.602	0.618
b2	1.22	1.32	0.048	0.052	H1	2.40	2.60	0.094	0.102
c	0.51	0.53	0.020	0.021	L	2.40	3.00	0.094	0.118
c1	1.29	1.32	0.051	0.052	L1	1.10	1.30	0.043	0.051
D	9.14	9.16	0.360	0.361	L2	1.20	1.70	0.047	0.067
D1	7.93	7.95	0.312	0.313	L3	4.85	5.45	0.191	0.215
E	10.00	10.20	0.394	0.402	L4	0.11	0.13	0.004	0.005

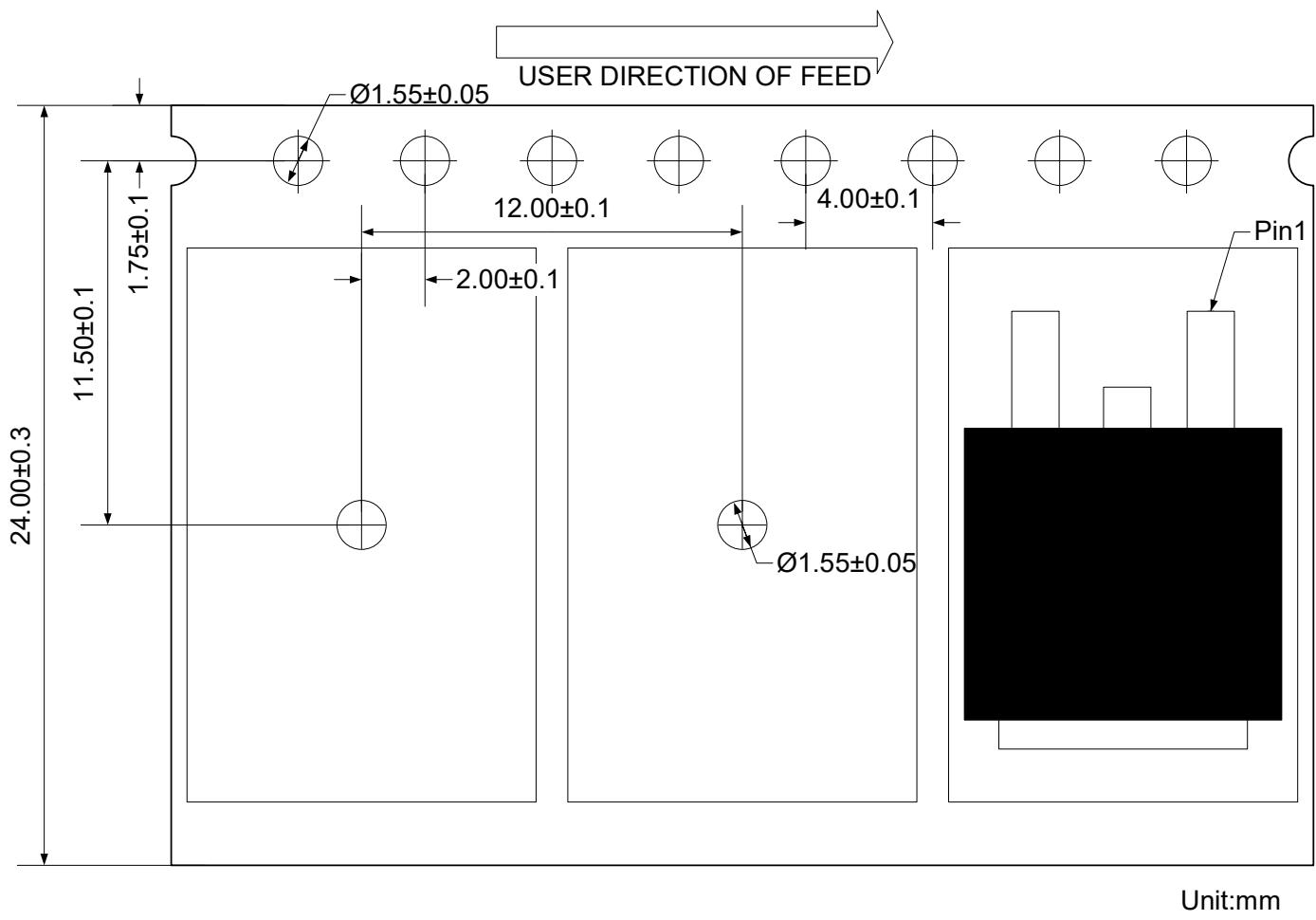
N-Channel MOSFET

PSMD2P11R4H

Ordering Information

Device	Package	Reel	Shipping
PSMD2P11R4H	TO-263	13"	800 / Tape & Reel

Load With Information



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