

Dual N-channel Power MOSFET: 12V, 2.75mohm, 25.7A

Product Summary

VSSS	VGSS	RSS(ON) TYP/MAX	IS MAX
12V	± 8V	2.20/2.75mΩ@VGS=4.5V 2.30/2.85mΩ@VGS=3.8V 2.40/3.95mΩ@VGS=3.1V 3.00/6.10mΩ@VGS=2.5V	25.7A

Marking Symbol Code

❖ Laser Marking Device Code: B



GS: Gostone
B: Marking Device Code (fixed)
D: Factory Code
Y: Year Code
W: Week Code
L: LOT Code
● : Pin#1 Identifier

Form

❖ Tape & Reel Embossed Type: 8,000pcs / reel

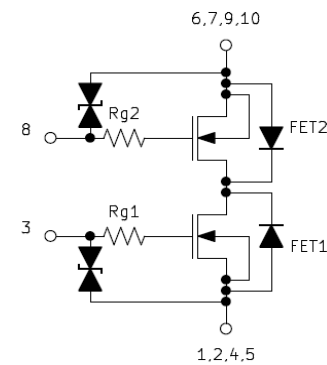
Features

- ❖ CSP (Chip Size Package)
- ❖ Halogen-Free / RoHS Compliant
- ❖ 2.5V Drive Low Source-Source On-State Resistance
- ❖ Gate Resistor Installed Common-Drain Type MOSFET
- ❖ ESD Protection Diode Installed (Gate-Source)

Application

- ❖ Lithim-Ion Secondary Battery Protection Circuits

Equivalent circuit



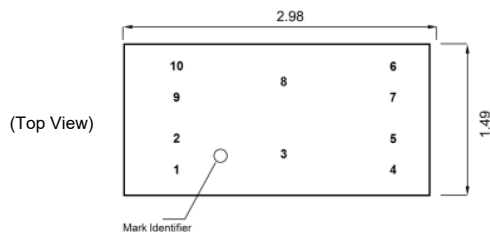
Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Rating	Unit
Source to Source Voltage	VSS	12	V
Gate to Source Voltage	VGS	±8	V
Source Current	DC	IS1 *1	12.8
	DC	IS2 *2	25.7
	Pulse	ISP *2*3	103
Total Dissipation	DC	PD1 *1	0.48
	DC	PD2 *2	1.92
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

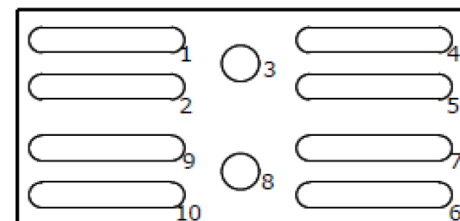
Thermal Characteristic (Ta=25°C)

Parameter	Symbol	Rating	Unit
Thermal Resistance	Rth *1	260	°C/W
	Rth *2	65	°C/W

Note *1 Mounted on FR4 board (25.4mm x 25.4mm x t1.0mm) with minimum copper pad (48.8mm², 36μm thickness copper)
Note *2 Mounted on FR4 board (25.4mm x 25.4mm x t1.0mm) with maximum copper pad (618.2mm², 36μm thickness copper)
Note *3 t=10μs, duty cycle ≤ 1%



(Bottom View)



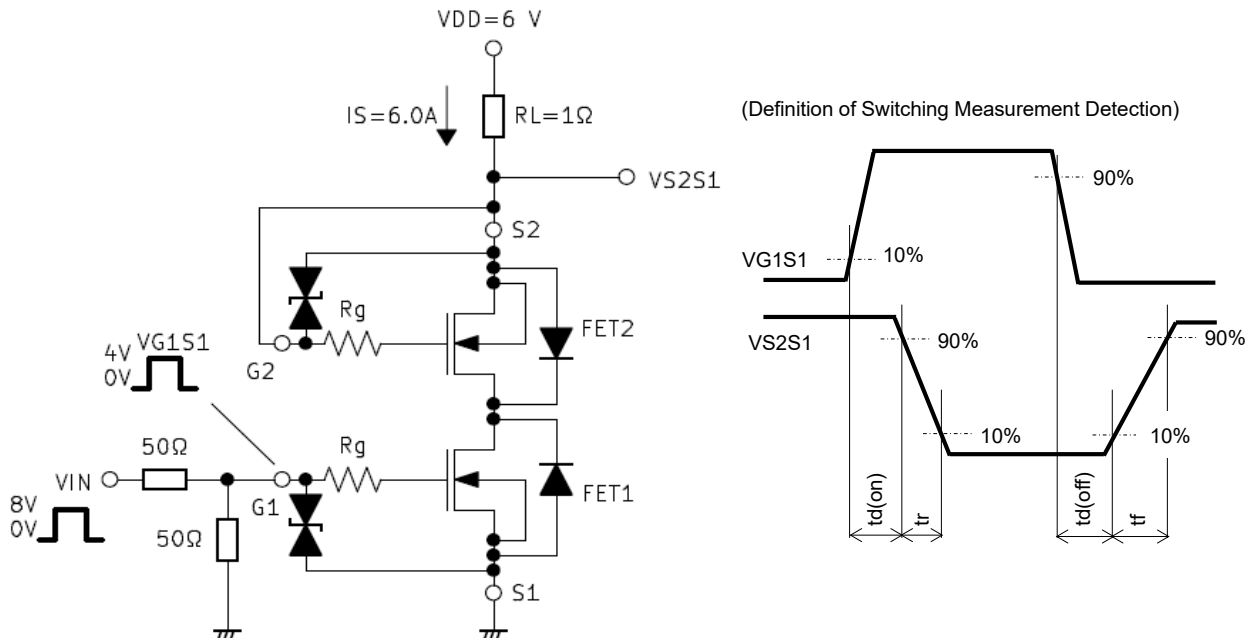
1,2,4,5. Source1 (FET1) 3. Gate1 (FET1)
6,7,9,10. Source2 (FET2) 8. Gate2 (FET2)

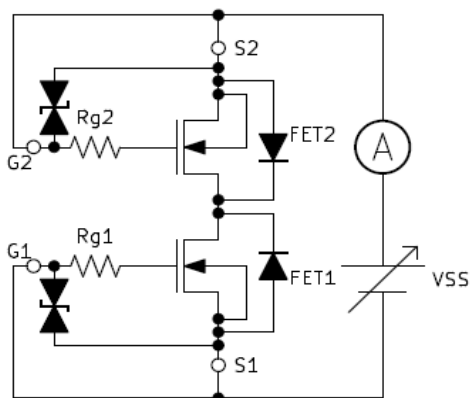
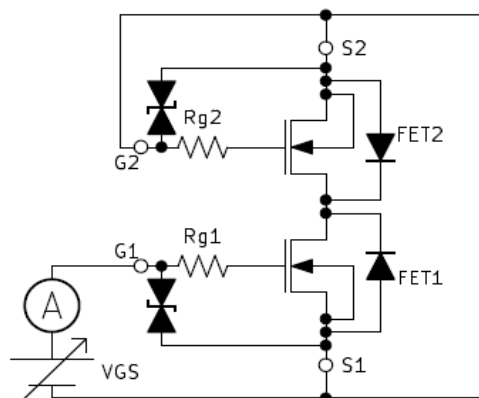
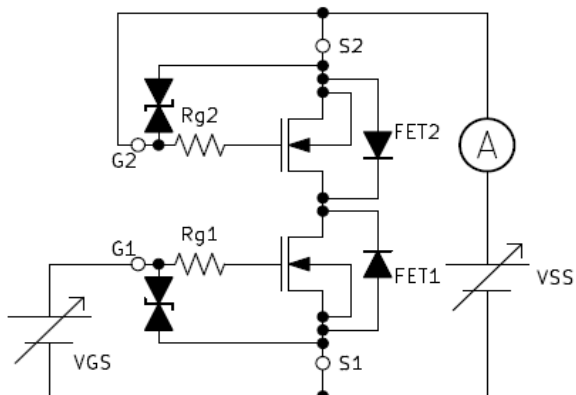
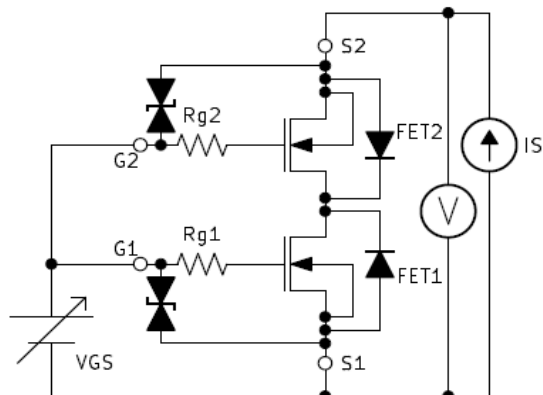
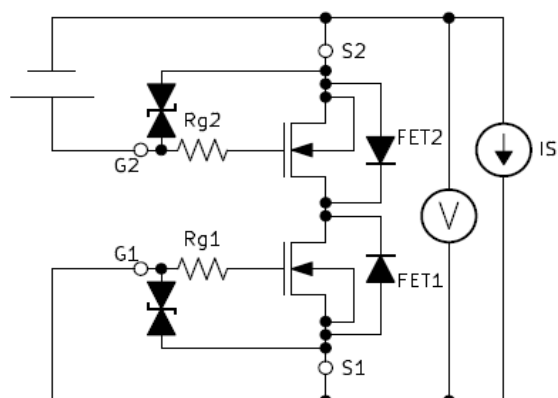
**Electrical characteristics (Ta=25°C ± 3°C)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Source-Source Breakdown Voltage	VSSS	IS=1mA, VGS=0V	12.0			V
Zero Gate Voltage Source Current	ISSS	VSS=12V, VGS=0V			1.0	μA
Gate-Source Leakage Current	IGSS1 IGSS2	VGS=±8V, VSS=0V VGS=±5V, VSS=0V			±10 ±1.0	μA
Gate-Source Threshold Voltage	Vth	VSS=6.0V, IS=1.0mA	0.4	0.9	1.4	V
Source-Source On-State Resistance	RSS(on)1 RSS(on)2 RSS(on)3 RSS(on)4	IS=6.0A, VGS=4.5V IS=6.0A, VGS=3.8V IS=6.0A, VGS=3.1V IS=6.0A, VGS=2.5V	1.55 1.60 1.65 1.90	2.20 2.30 2.40 3.00	2.75 2.85 3.95 6.10	mΩ
Body Diode Forward Voltage	VF(S-S)	IF=6.0A, VGS=0V		0.68	1.2	V
Input Capacitance *1	Ciss	VSS=10V, VGS=0V, f=1kHz		4760		pF
Output Capacitance *1	Coss			500		
Reverse Transfer Capacitance *1	Crss			360		
Turn-On Delay Time *1 *2	td(on)	VDD=6.0V, VGS=0 to 4.0V, IS=6.0A		1.6		μs
Rise Time *1 *2	tr			2.2		
Turn-Off Delay Time *1 *2	td(off)	VDD=6.0V, VGS=4.0 to 0V, IS=6.0A		5.2		μs
Fall Time *1 *2	tf			3.5		
Total Gate Charge *1	Qg	VDD=6.0V, VGS=0 to 4.0V, IS=6.0A		35.1		nC
Gate-Source Charge *1	Qgs			8.9		
Gate-Drain Charge *1	Qgd			8		
Gate Resistance *1	Rg	f=1MHz		850		Ω

Note *1 Guaranteed by Design

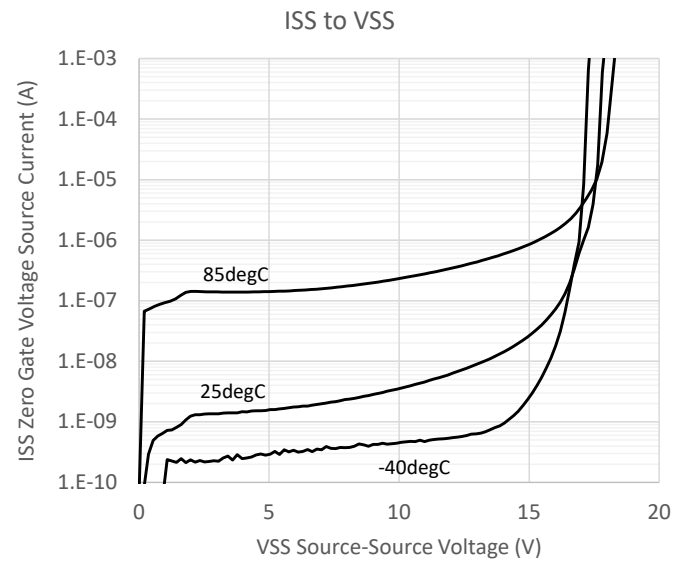
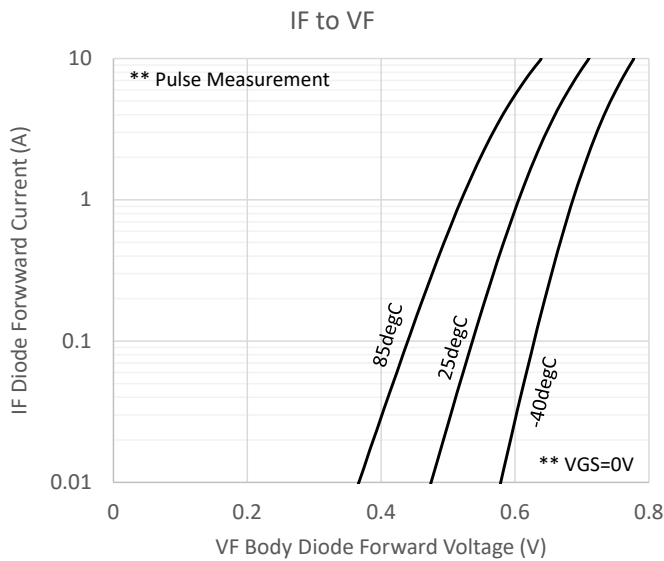
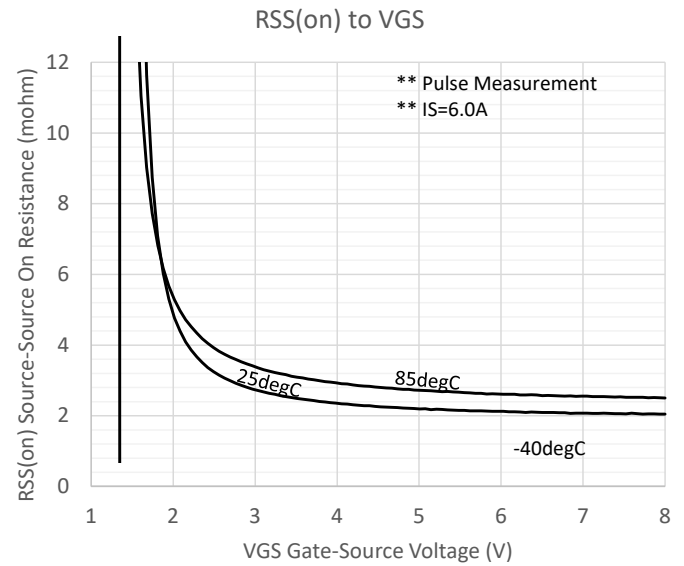
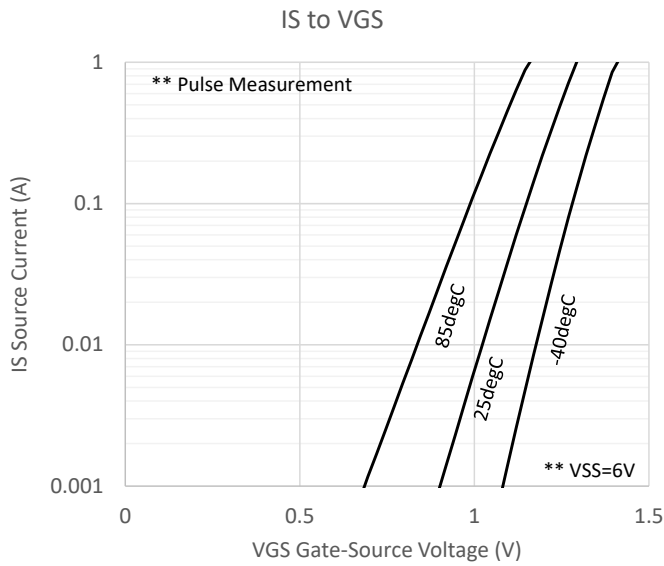
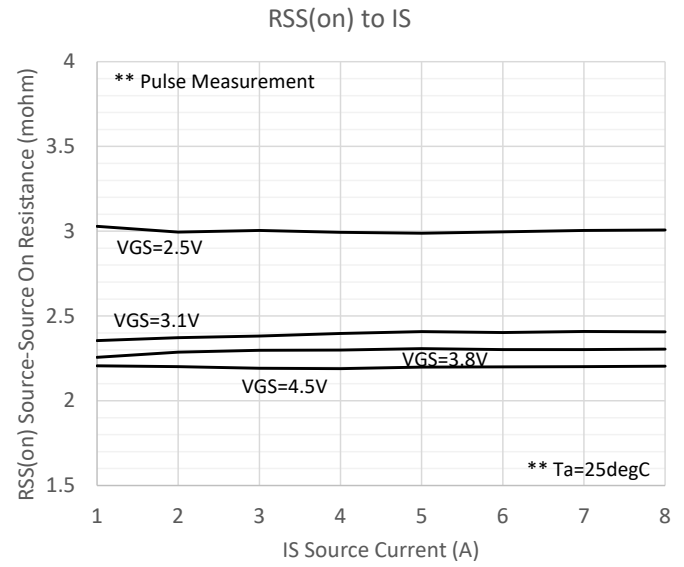
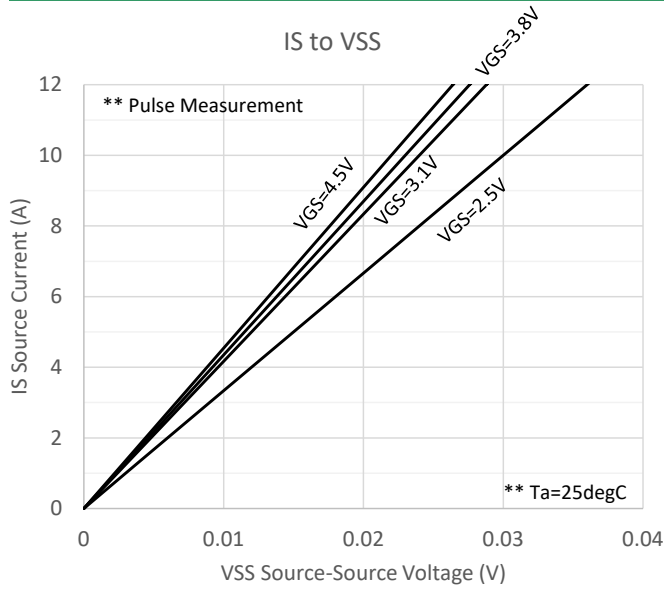
Note *2 Measurement Circuit for Switching Characteristics

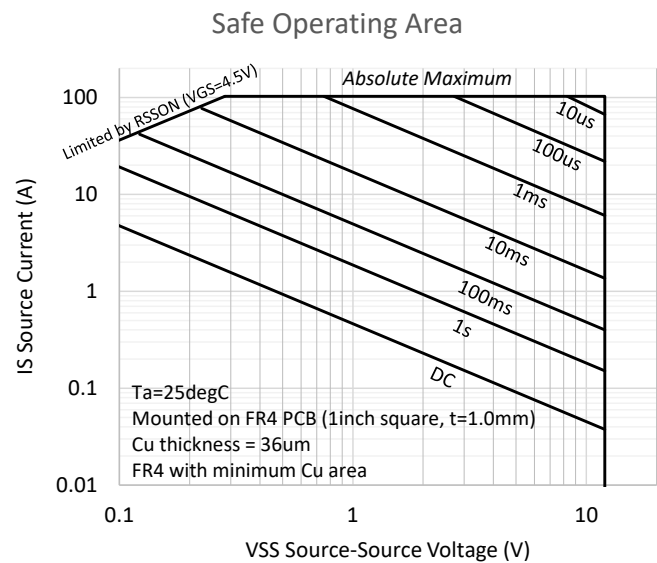
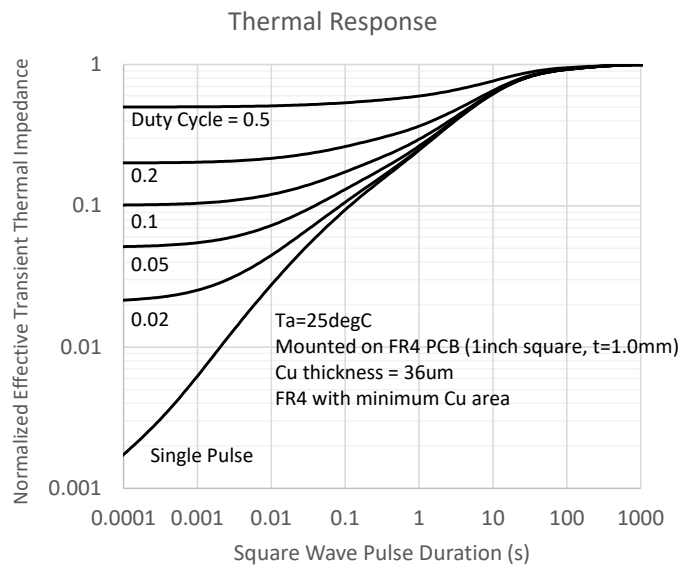
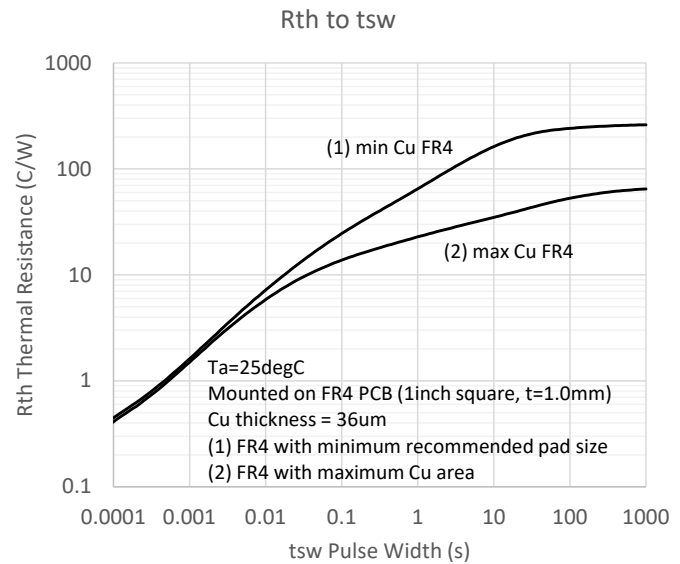
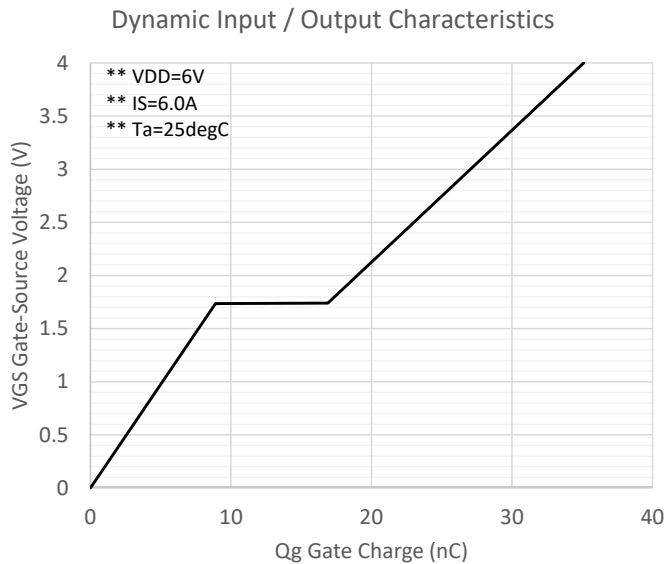
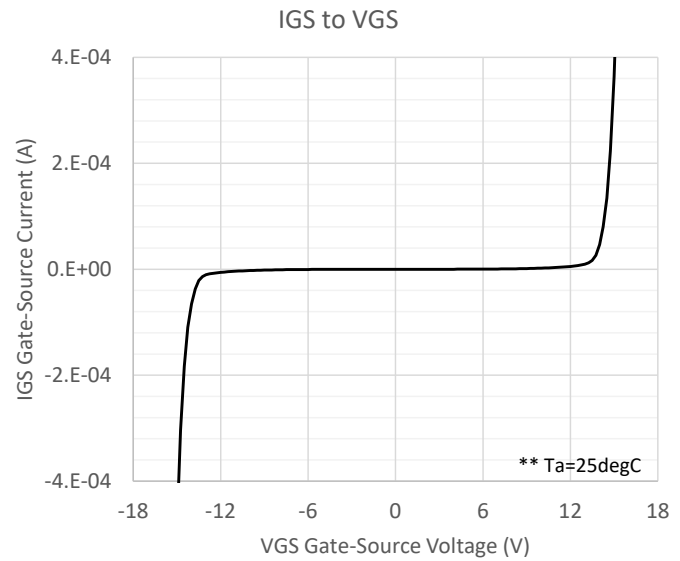
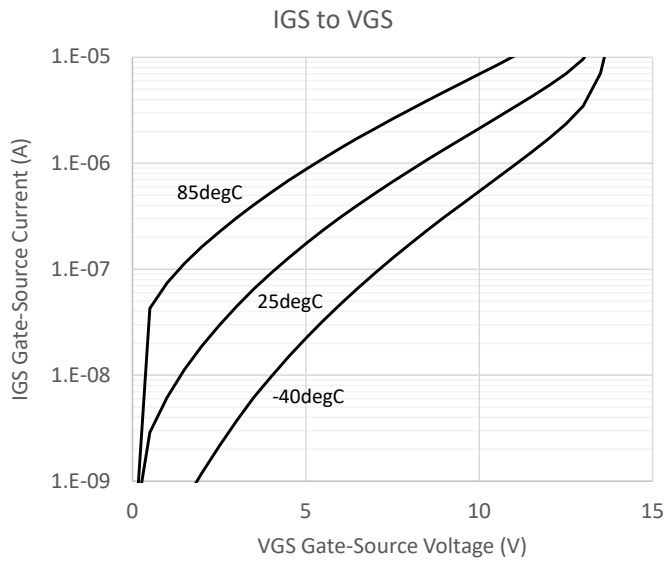
FET1 Measurement Circuit for Switching Characteristics td(on), tr, td(off), tf (FET2: Gate-Source Short)

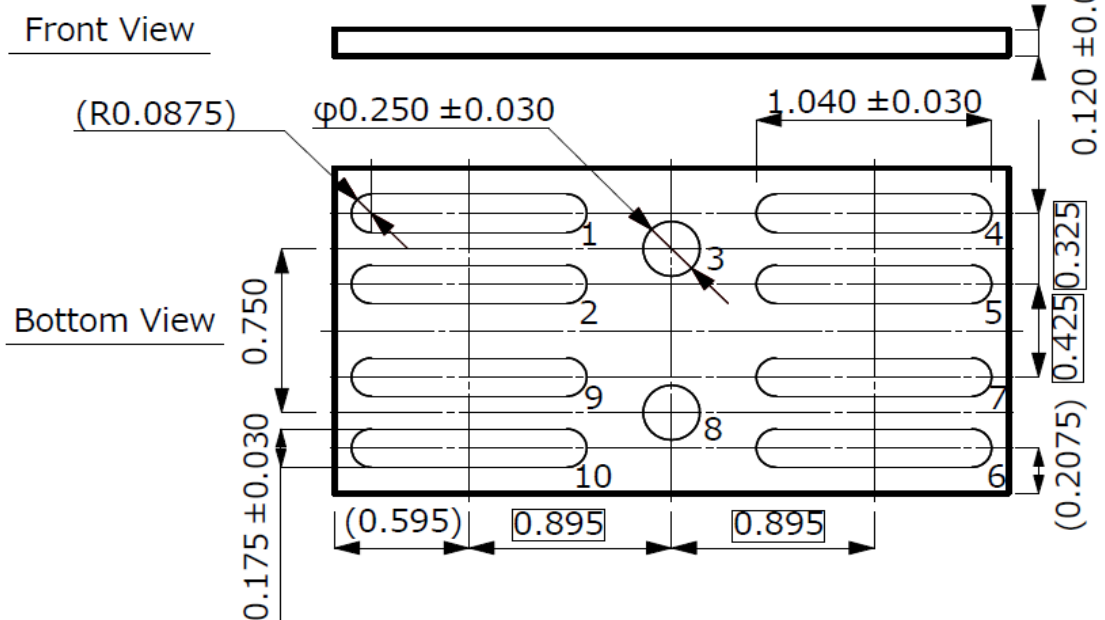
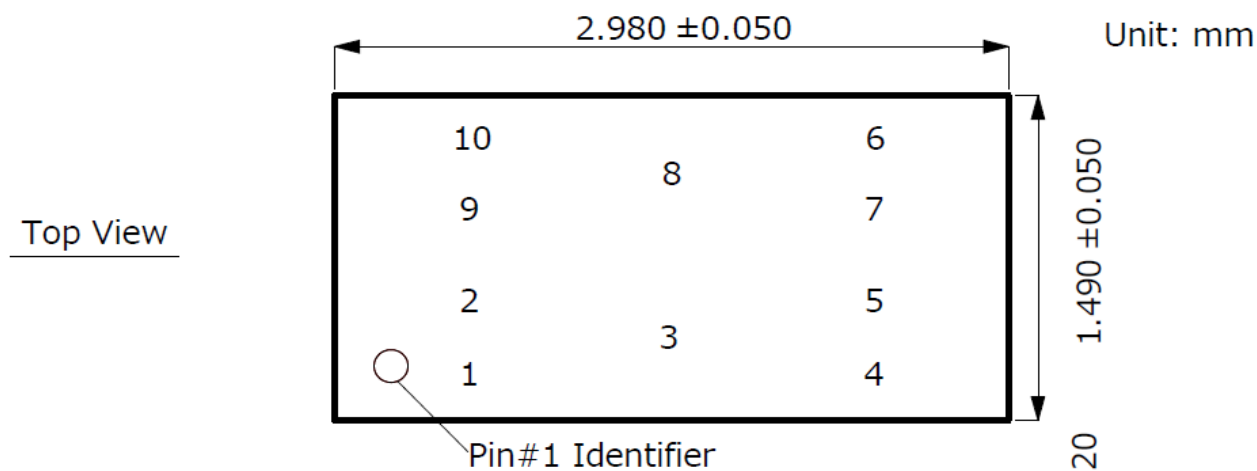
Test Circuit for FET1
**Test Circuit 1
VGSS/ISS**

**Test Circuit 2
IGSS/1/2**

**Test Circuit 3
V_{th}**

**Test Circuit 4
RSS(on)**

**Test Circuit 5
VF(S-S)**




Technical data

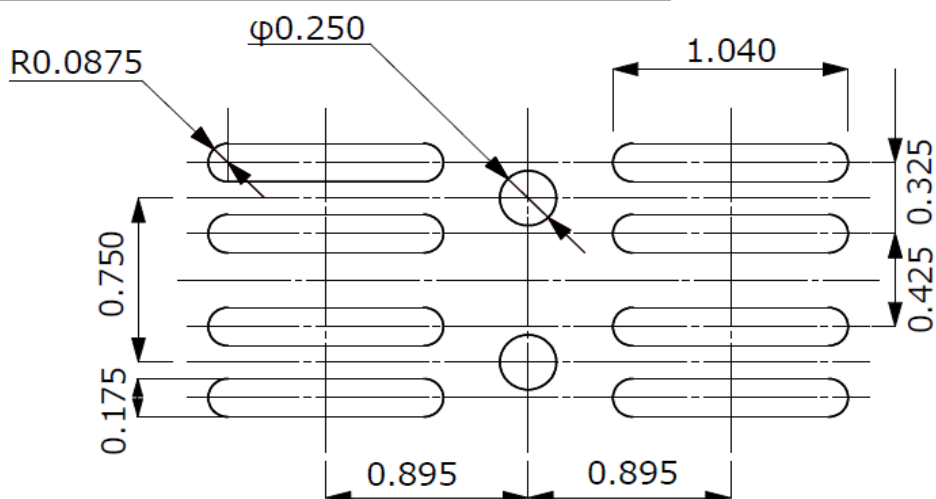


Technical data


Package outline dimensions


(Reference) Board Land and Stencil Mask Pattern

Unit: mm

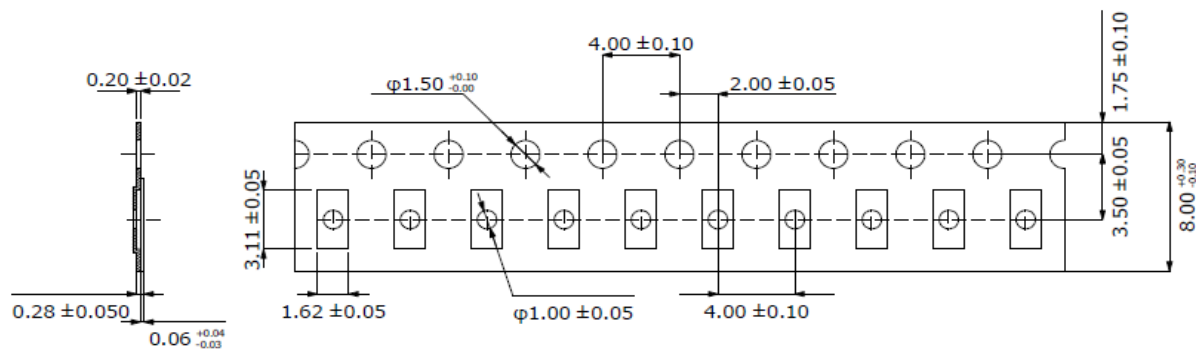


Form

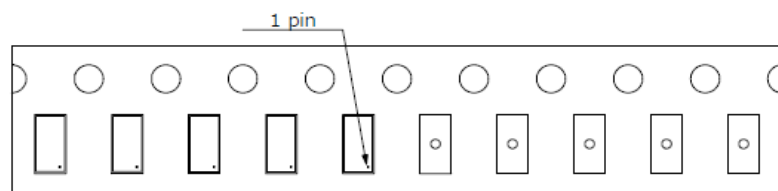
Tape & Reel Embossed Type: 8,000pcs / reel

Factory PKG Code: WLCSP3.00x1.51_10

Tape Width: 8mm, Pitch: 4mm, Reel Size: 7inch



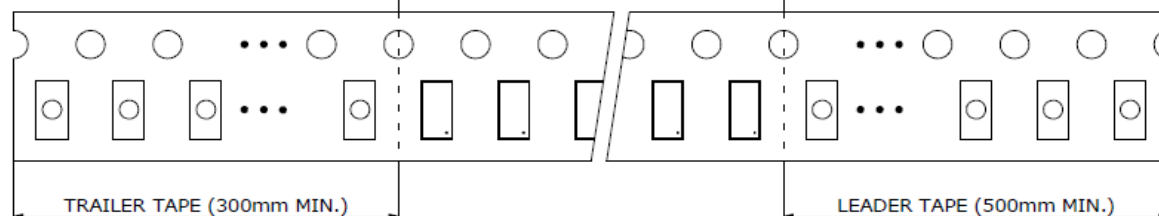
1pin Direction



Tape end

COMPONENTS TAPE (ORIENTATION IN POCKET)

Leader part



Feeding Direction

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