Ordering number : EN8994B

FW217A

N-Channel Power MOSFET
35V, 6A, 39mΩ, Dual SOIC8

ON Semiconductor®
http://onsemi.com

Features

- On-state resistance $R_{DS}(on)1$=30mΩ (typ.)
- 4.5V drive
- Halogen free compliance
- Protection Diode in

Specifications

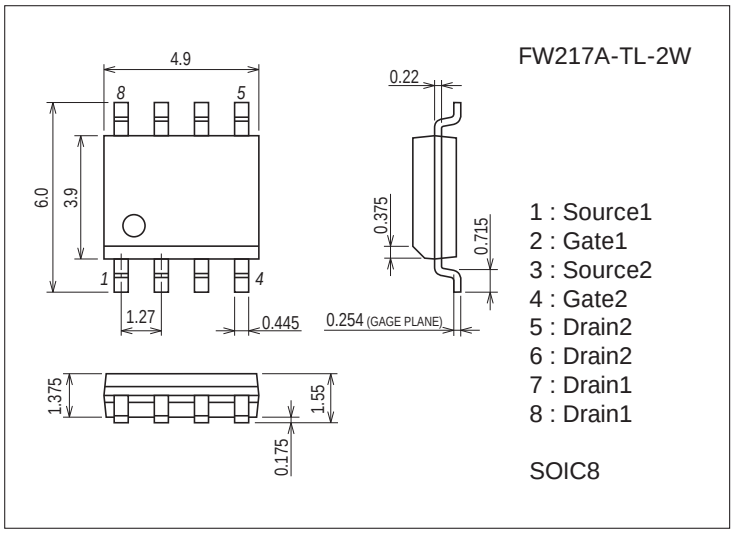
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		35	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		6	A
Drain Current (PW≤10s)	I_{DP}	Duty cycle≤1%	6.5	A
Drain Current (PW≤10μs)	I_{DP}	Duty cycle≤1%	24	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (2000mm²×0.8mm) 1unit, PW≤10s	1.8	W
Total Dissipation	P_T	When mounted on ceramic substrate (2000mm²×0.8mm), PW≤10s	2.2	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

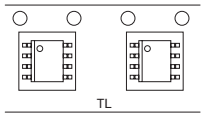
unit : mm (typ)
7072-001



Product & Package Information

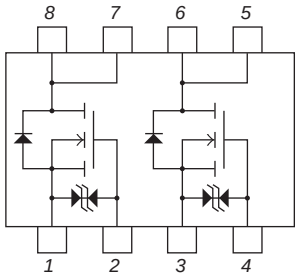
- Package : SOIC8
- JEITA, JEDEC : SC-87, SOT-96
- Minimum Packing Quantity : 2,500 pcs./reel

Packing Type : TL



Marking

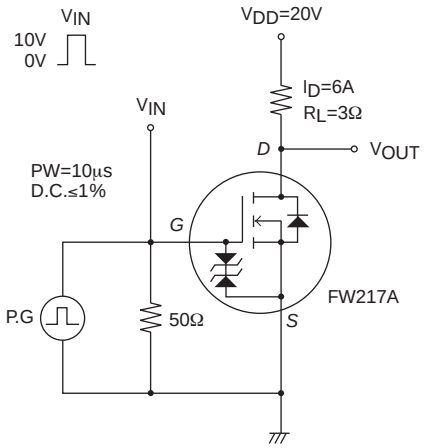
Electrical Connection



Electrical Characteristics at Ta=25°C

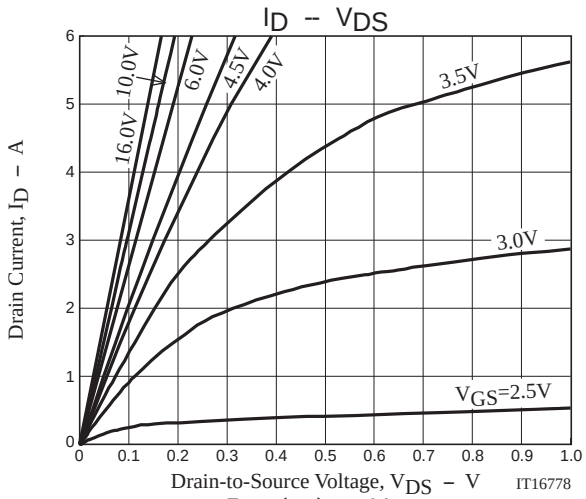
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	35			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=35V, V_{GS}=0V			1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	1.7		2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=6A		3		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=6A, V_{GS}=10V		30	39	mΩ
	R_{DS}(on)2	I_D=3A, V_{GS}=4.5V		50	70	mΩ
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		470		pF
Output Capacitance	Coss			70		pF
Reverse Transfer Capacitance	Crss			35		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		8		ns
Rise Time	t_r			34		ns
Turn-OFF Delay Time	t_d(off)			31		ns
Fall Time	t_f			30		ns
Total Gate Charge	Qg	V_{DS}=20V, V_{GS}=10V, I_D=6A		10		nC
Gate-to-Source Charge	Qgs			2		nC
Gate-to-Drain “Miller” Charge	Qgd			2		nC
Diode Forward Voltage	V_{SD}	I_S=6A, V_{GS}=0V		0.84	1.2	V

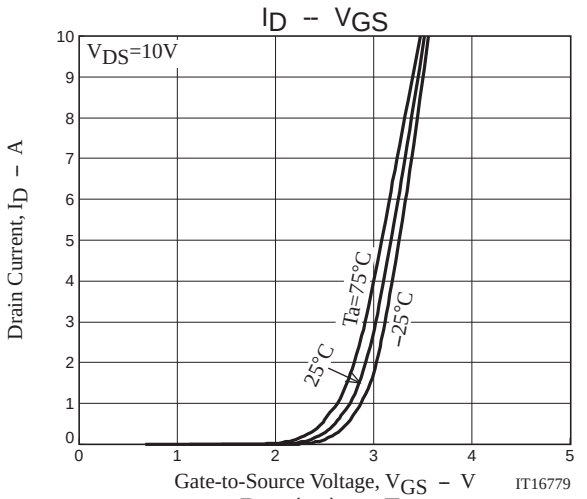
Switching Time Test Circuit

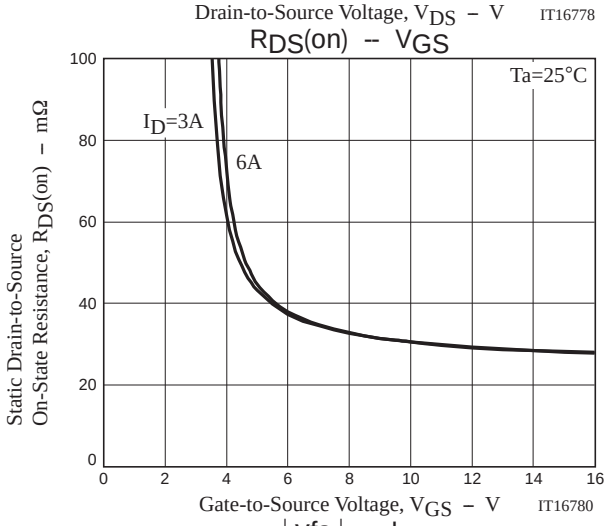


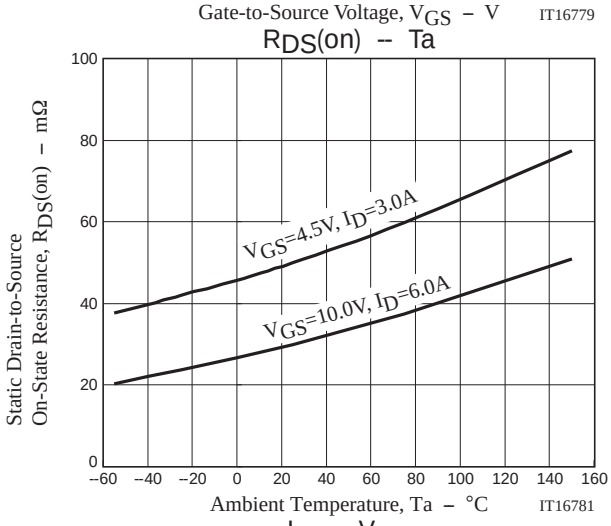
Ordering Information

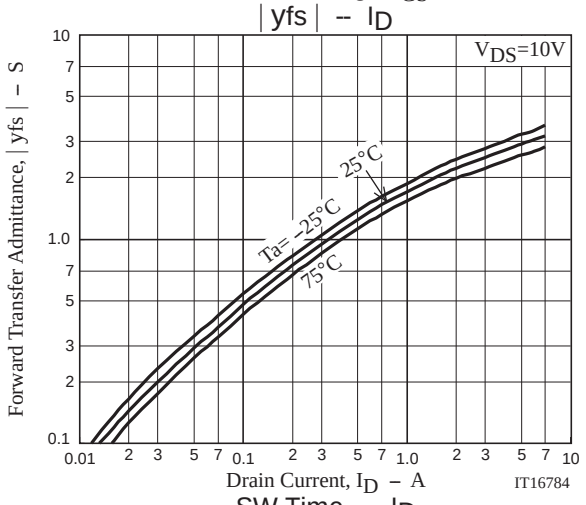
Device	Package	Shipping	memo
FW217A-TL-2W	SOIC8	2,500pcs./reel	Pb Free and Halogen Free

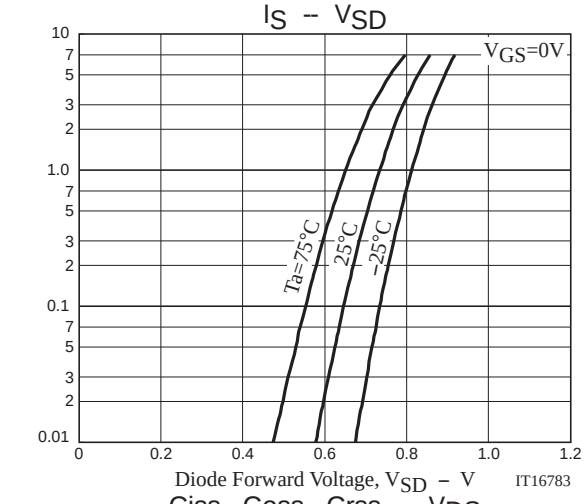

ID -- VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT16778
16.0V
10.0V
6.0V
4.5V
4.0V
3.5V
3.0V
VGS=2.5V

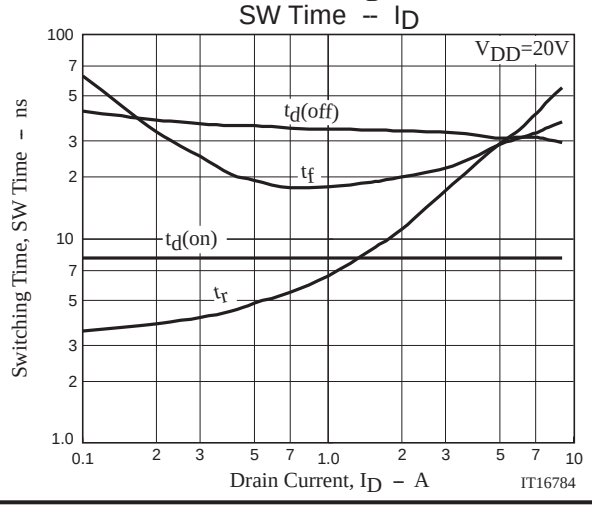

ID -- VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT16779
VDS=10V
Ta=75°C
25°C
–25°C

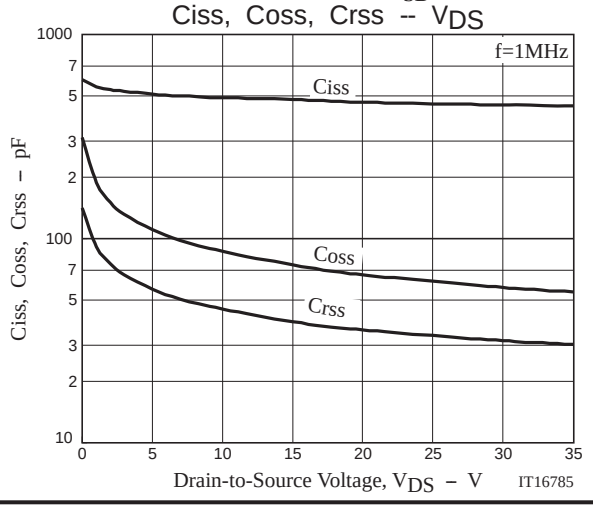

RDS(on) -- VGS
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT16780
Ta=25°C
ID=3A
6A

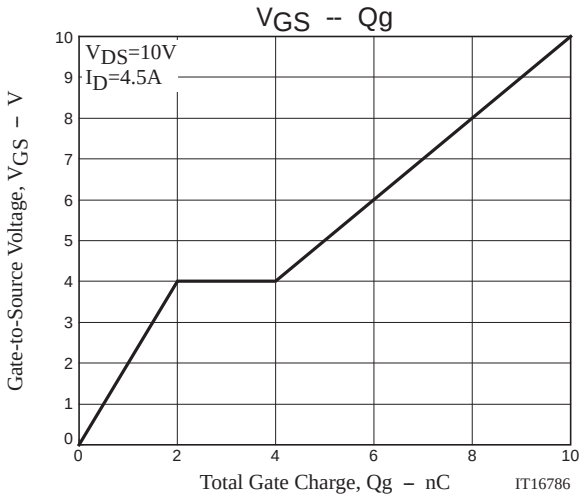

RDS(on) -- Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT16781
VGS=4.5V, ID=3.0A
VGS=10.0V, ID=6.0A

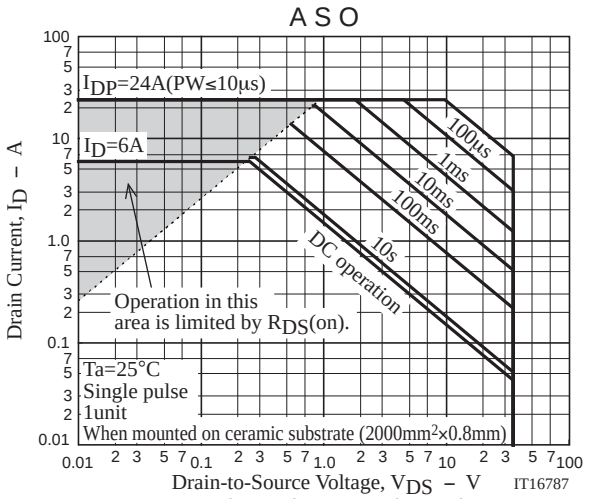

| yfs | -- ID
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT16784
VDS=10V
25°C
Ta=–25°C
75°C

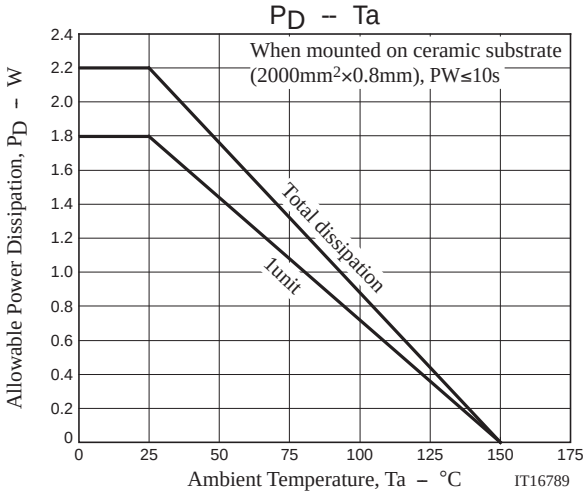

IS -- VSD
Diode Forward Voltage, VSD – V
IT16783
VGS=0V
Ta=75°C
25°C
–25°C

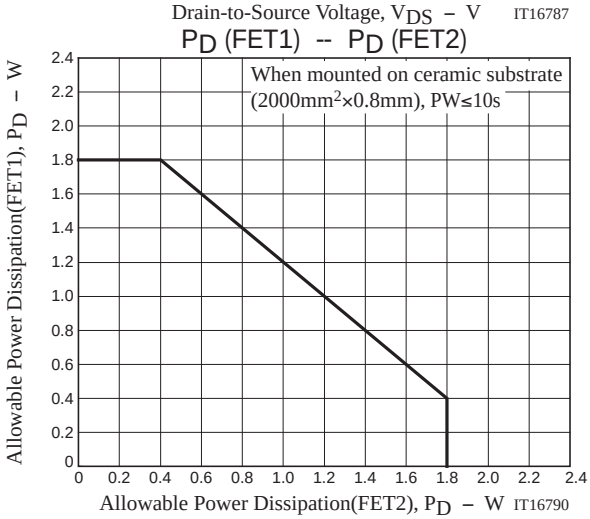

SW Time -- ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT16784
VDD=20V
td(off)
tf
td(on)
tr


Ciss, Coss, Crss -- VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT16785
f=1MHz
Ciss
Coss
Crss









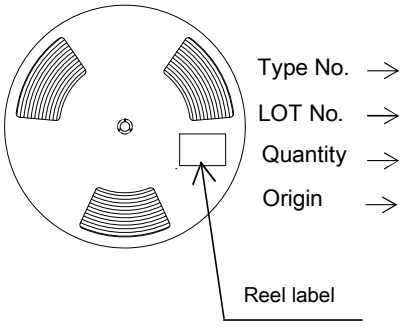
Taping Specification

FW217A-TL-2W

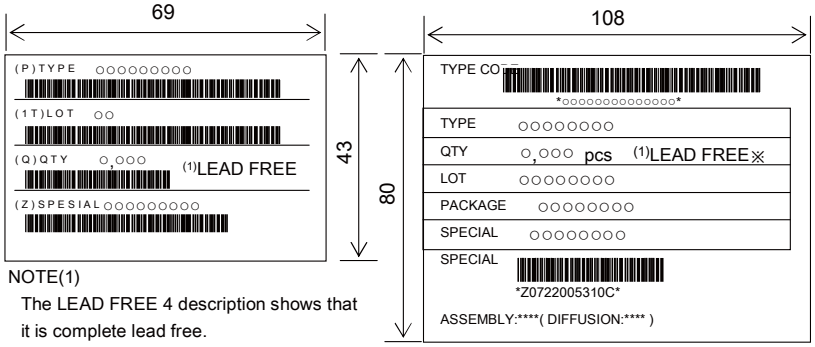
1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX W206-112	Outer BOX W207-124
SOIC8	B202-101	2,500	12,500	25,000	5 reels contained Dimensions :mm(external) 340×95×340	2 inner boxes contained Dimensions :mm(external) 360×210×375

Packing method



Reel label,Inner box label
(unit: mm)



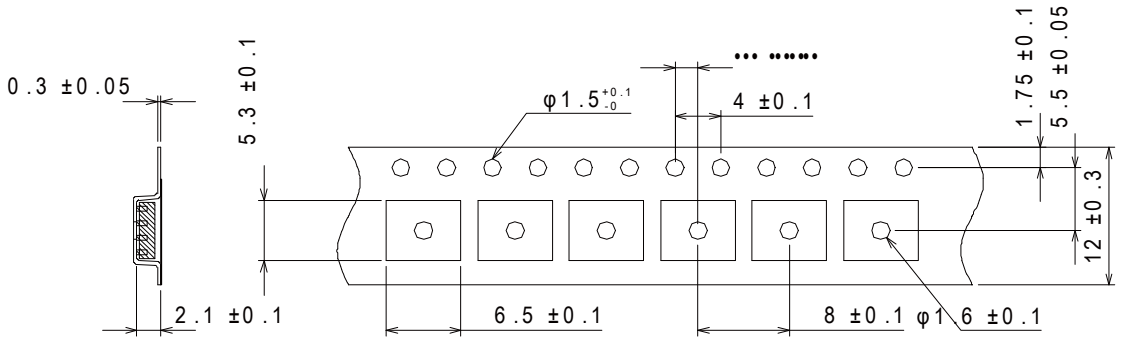
NOTE(1)
The LEAD FREE 4 description shows that it is complete lead free.

Label	JEITA Phase
LEAD FREE 4	JEITA Phase 3

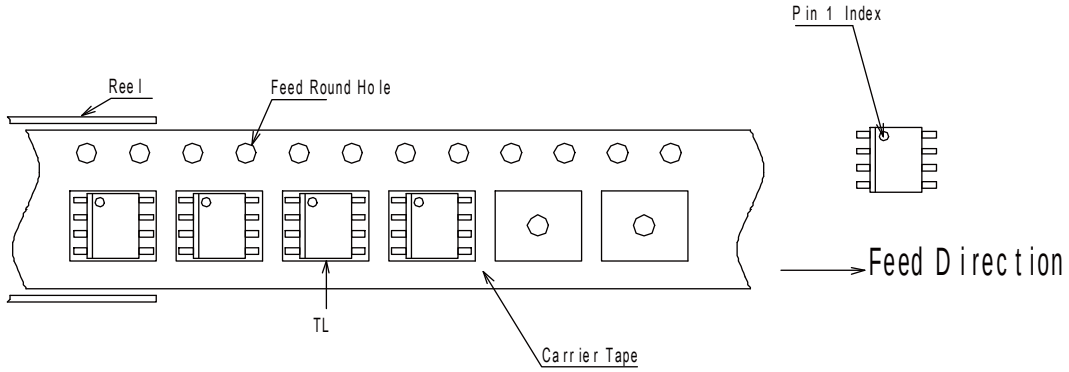
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

2. Taping configuration

2-1. Carrier tape size (unit: mm)

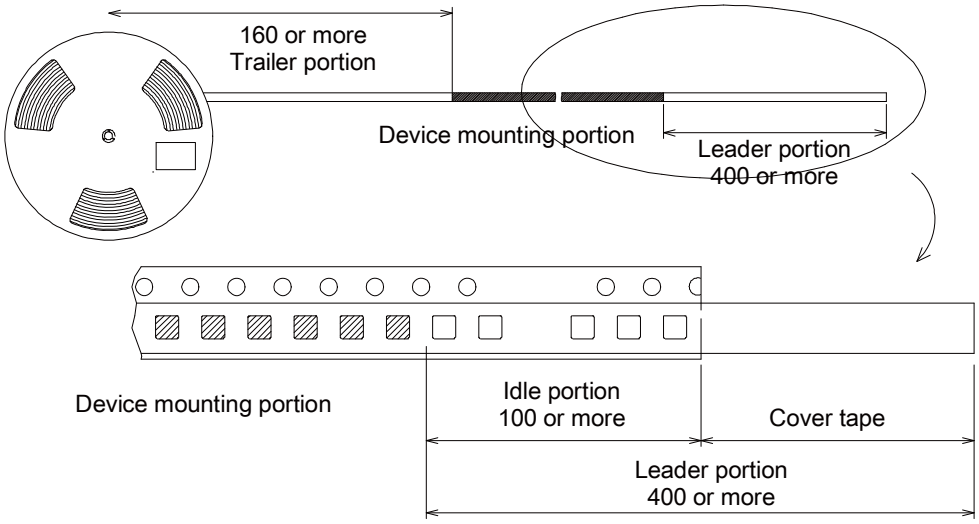


2-2. Device placement direction



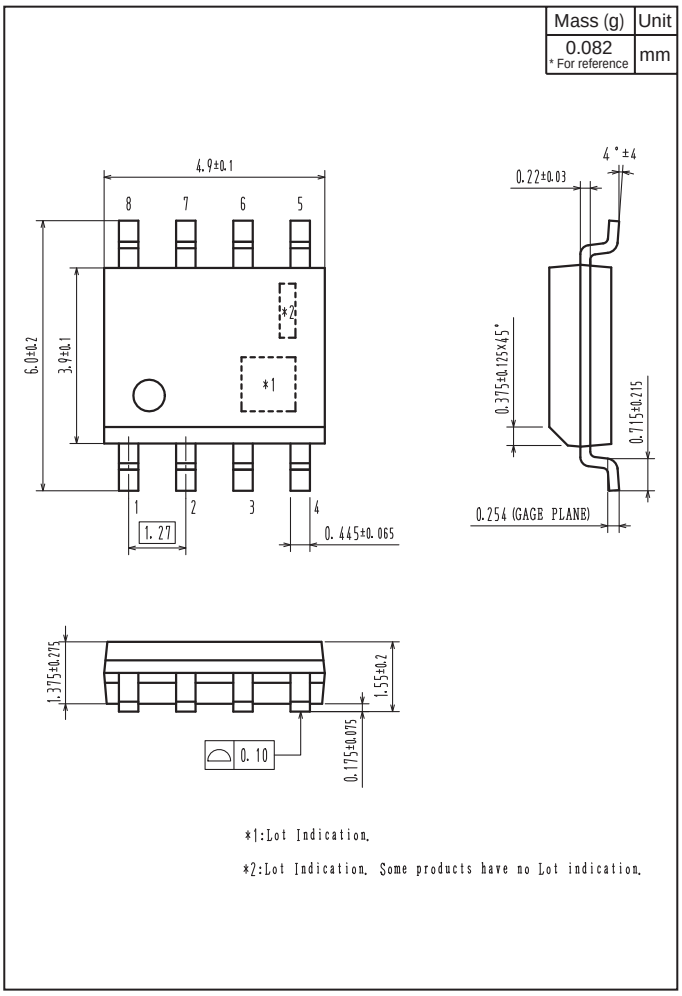
Packing type·····TL

2-3. Leader portion and trailer portion (unit: mm)

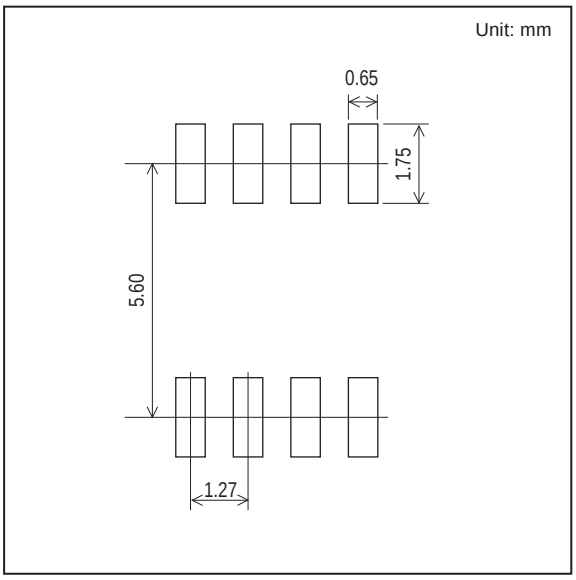


Outline Drawing

FW217A-TL-2W



Land Pattern Example



Note on usage : Since the FW217A is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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