



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

FW344A — N-Channel and P-Channel Silicon MOSFETs General-Purpose Switching Device Applications

Features

- ON-resistance Nch : $R_{DS(on)1}=49m\Omega(\text{typ.})$
Pch : $R_{DS(on)1}=78m\Omega(\text{typ.})$
- 4V drive
- Halogen free compliance
- Nch+Pch MOSFET

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	N-channel	P-channel	Unit
Drain-to-Source Voltage	V_{DSS}		30	-30	V
Gate-to-Source Voltage	V_{GSS}		± 20	± 20	V
Drain Current (DC)	I_D		4.5	-3.5	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	Duty cycle $\leq 1\%$	5	-4	A
Drain Current ($PW \leq 10\mu\text{s}$)	I_{DP}	Duty cycle $\leq 1\%$	18	-14	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (2000mm ² ×0.8mm) 1unit	1.4		W
Total Dissipation	P_T	When mounted on ceramic substrate (2000mm ² ×0.8mm)	1.7		W
Channel Temperature	T_{ch}		150		°C
Storage Temperature	T_{stg}		-55 to +150		°C

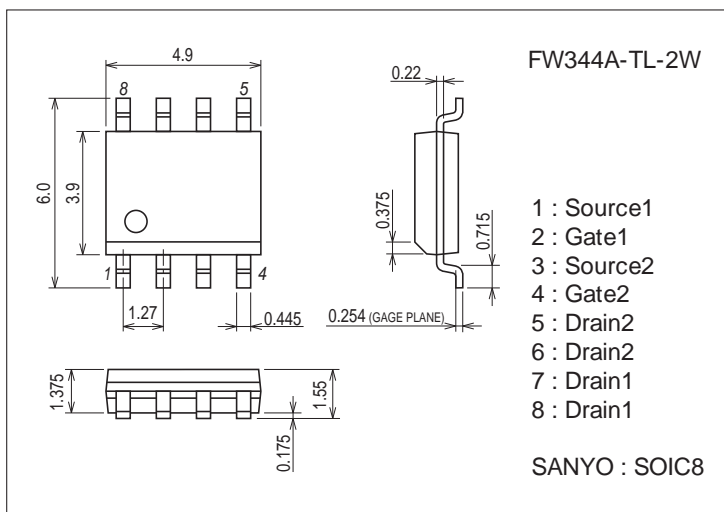
This product is designed to "ESD immunity < 200V**", so please take care when handling.

* Machine Model

Package Dimensions

unit : mm (typ)

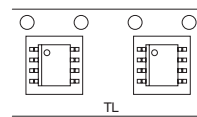
7072-001



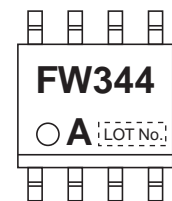
Product & Package Information

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

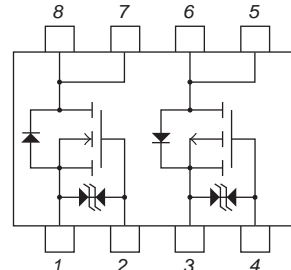
Packing Type : TL



Marking



Electrical Connection



FW344A

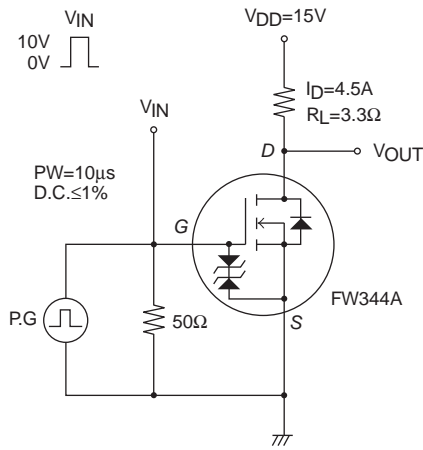
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[N-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0V	30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=30V, VGS=0V			1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	1.2		2.6	V
Forward Transfer Admittance	yfs	VDS=10V, ID=4.5A		2.6		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=4.5A, VGS=10V		49	64	mΩ
	RDS(on)2	ID=2A, VGS=4.5V		80	112	mΩ
	RDS(on)3	ID=2A, VGS=4V		100	140	mΩ
Input Capacitance	Ciss	VDS=10V, f=1MHz		280		pF
Output Capacitance	Coss			60		pF
Reverse Transfer Capacitance	Crss			30		pF
Turn-ON Delay Time	td(on)		See specified Test Circuit.		6	
Rise Time	tr			21		ns
Turn-OFF Delay Time	td(off)			20		ns
Fall Time	tf			10		ns
Total Gate Charge	Qg	VDS=10V, VGS=10V, ID=4.5A			5.6	
Gate-to-Source Charge	Qgs			1.2		nC
Gate-to-Drain "Miller" Charge	Qgd			0.8		nC
Diode Forward Voltage	VSD		IS=4.5A, VGS=0V		0.85	1.2
[P-channel]						
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=-1mA, VGS=0V	-30			V
Zero-Gate Voltage Drain Current	IDSS	VDS=-30V, VGS=0V			-1	μA
Gate-to-Source Leakage Current	IGSS	VGS=±16V, VDS=0V			±10	μA
Cutoff Voltage	VGS(off)	VDS=-10V, ID=-1mA	-1.2		-2.3	V
Forward Transfer Admittance	yfs	VDS=-10V, ID=-3.5A		3.9		S
Static Drain-to-Source On-State Resistance	RDS(on)1	ID=-3.5A, VGS=-10V		78	102	mΩ
	RDS(on)2	ID=-2A, VGS=-4.5V		125	175	mΩ
	RDS(on)3	ID=-2A, VGS=-4V		145	205	mΩ
Input Capacitance	Ciss	VDS=-10V, f=1MHz		250		pF
Output Capacitance	Coss			65		pF
Reverse Transfer Capacitance	Crss			46		pF
Turn-ON Delay Time	td(on)		See specified Test Circuit.		5.4	
Rise Time	tr			34		ns
Turn-OFF Delay Time	td(off)			28		ns
Fall Time	tf			24		ns
Total Gate Charge	Qg	VDS=-10V, VGS=-10V, ID=-3.5A			5	
Gate-to-Source Charge	Qgs			1		nC
Gate-to-Drain "Miller" Charge	Qgd			1.2		nC
Diode Forward Voltage	VSD		IS=-3.5A, VGS=0V		-0.88	-1.5

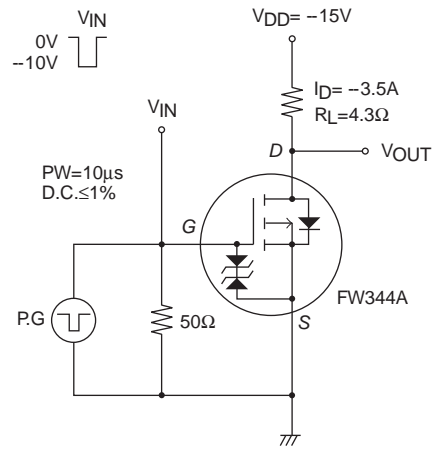
FW344A

Switching Time Test Circuit

[N-channel]

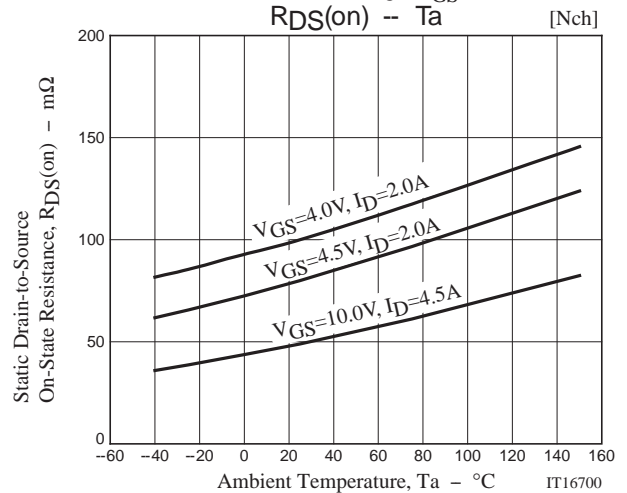
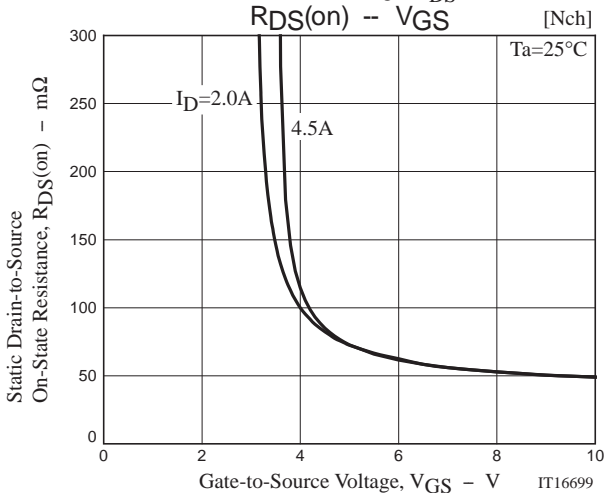
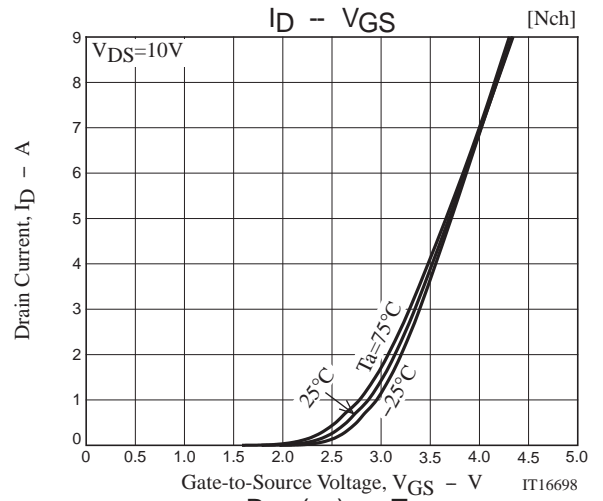
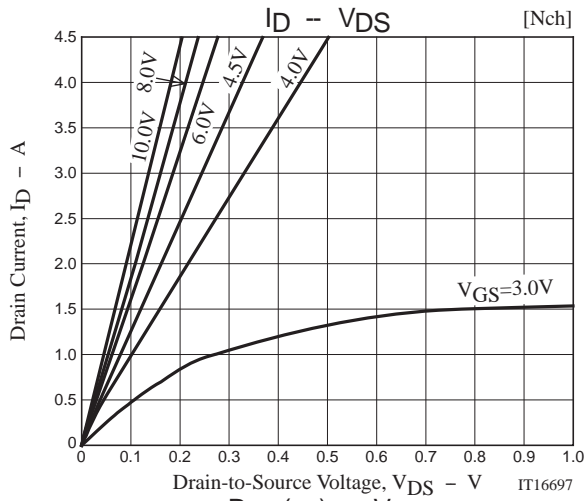


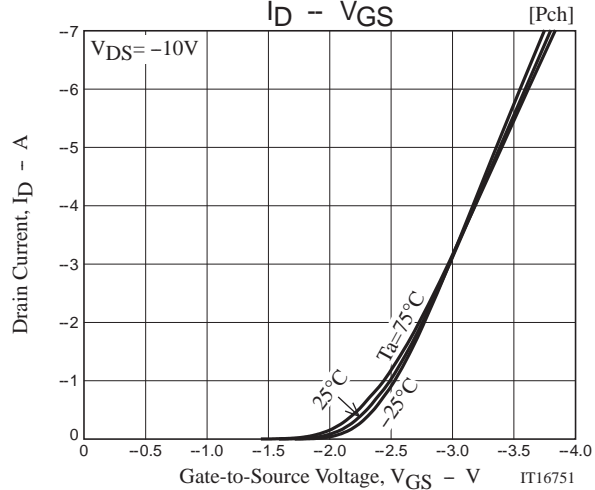
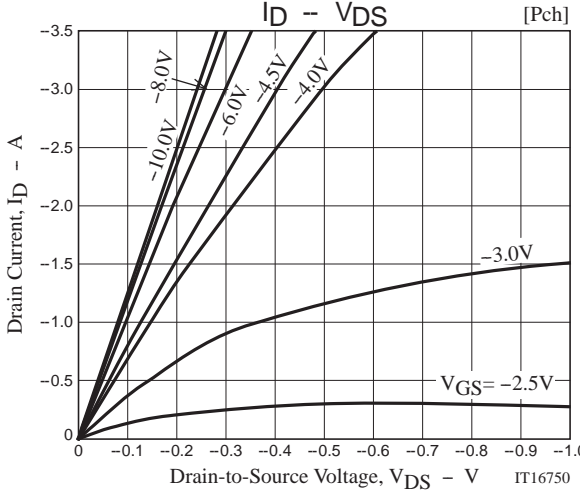
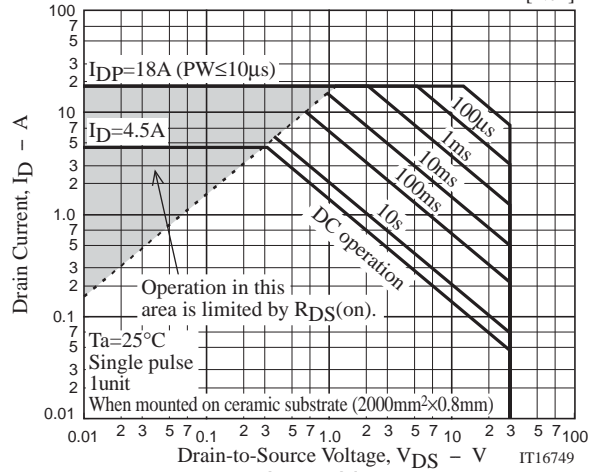
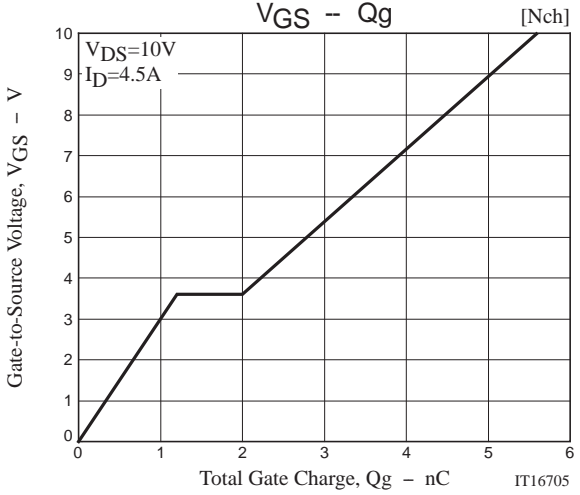
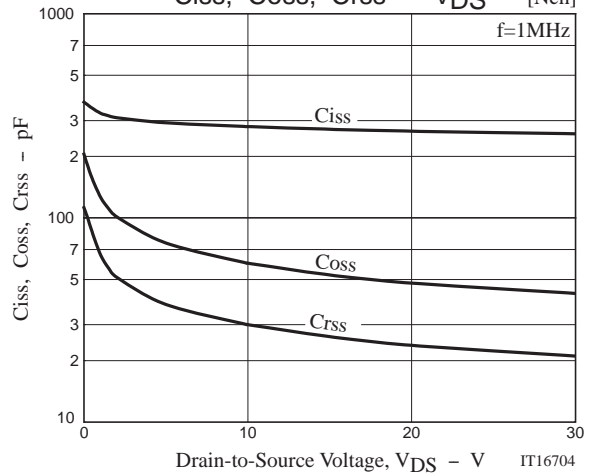
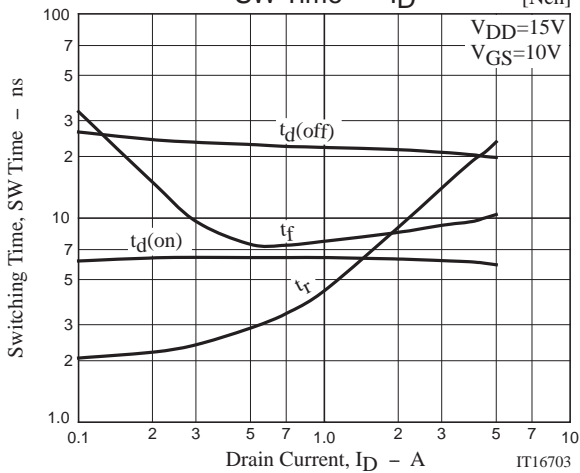
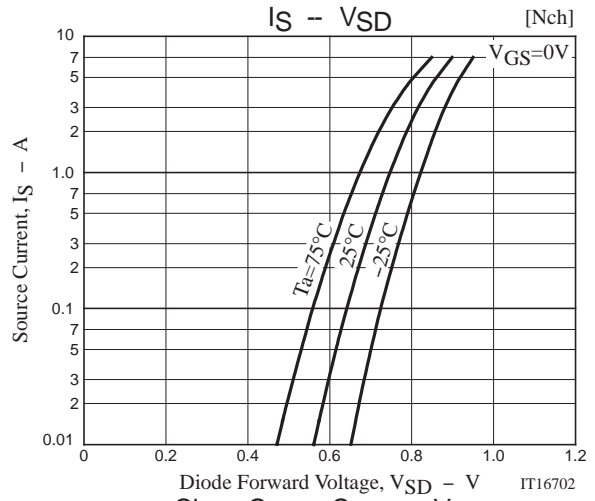
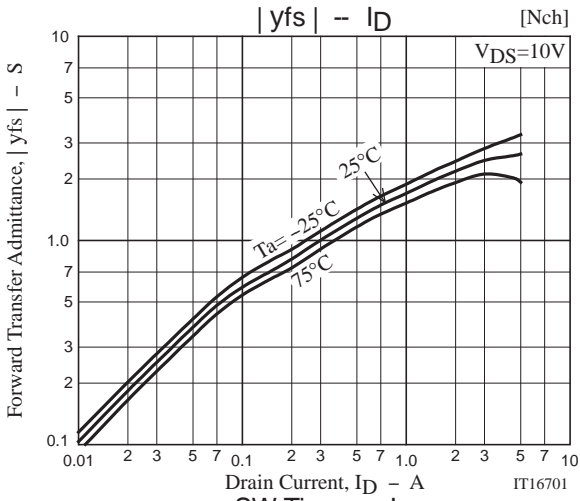
[P-channel]

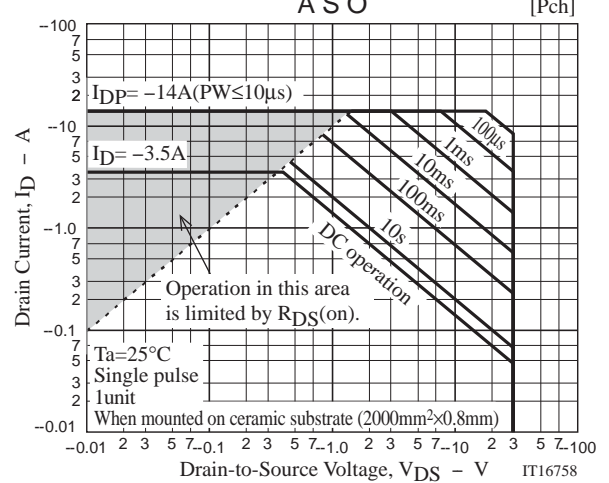
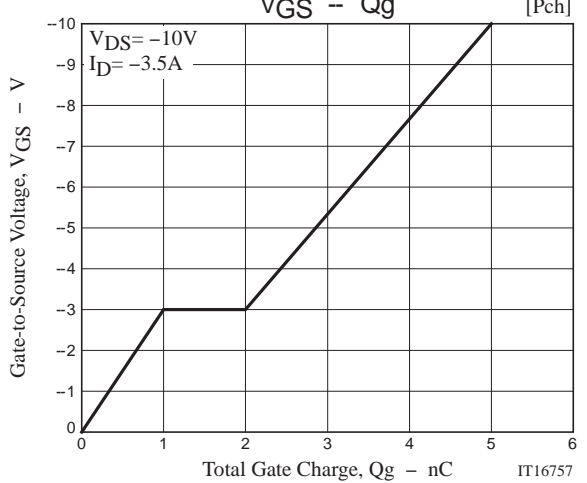
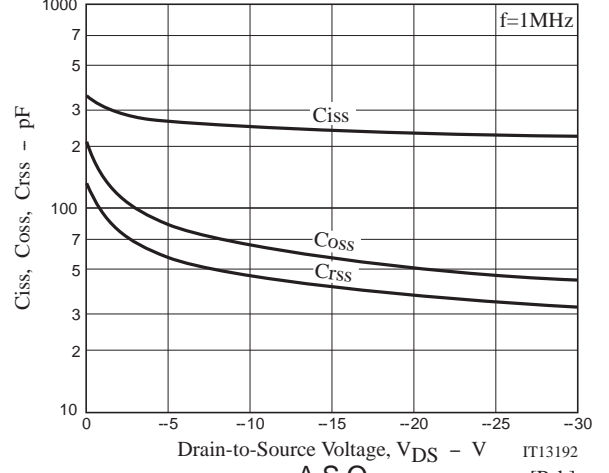
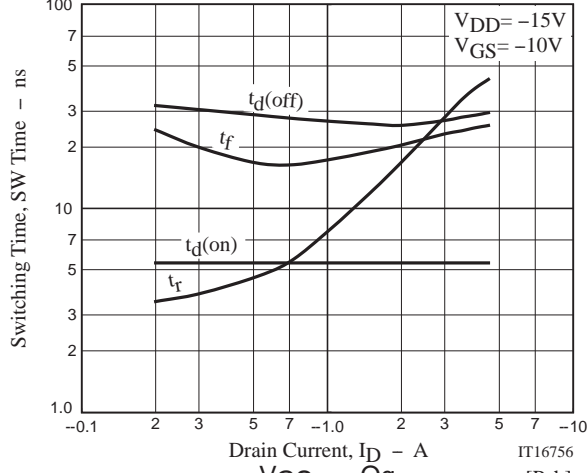
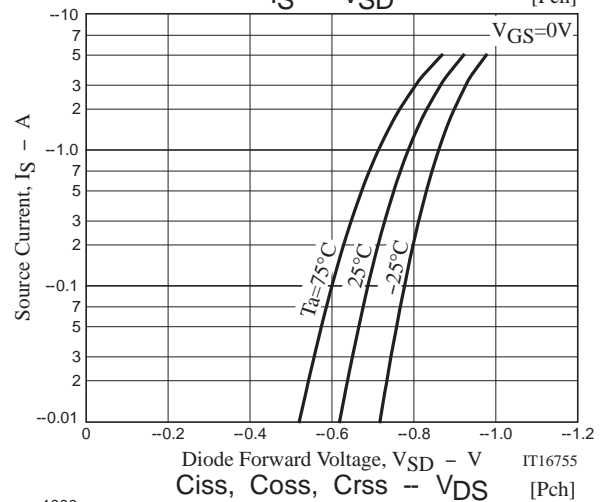
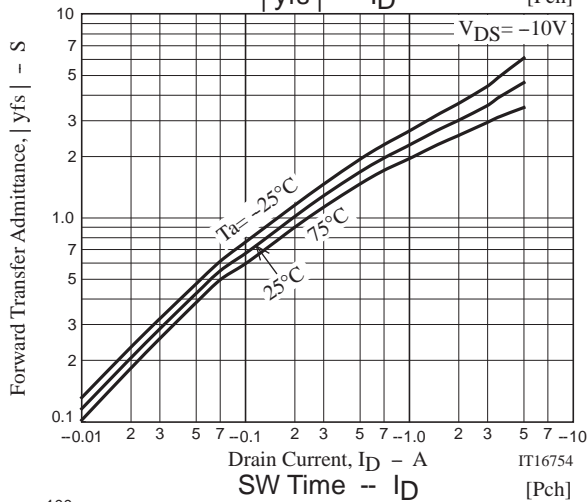
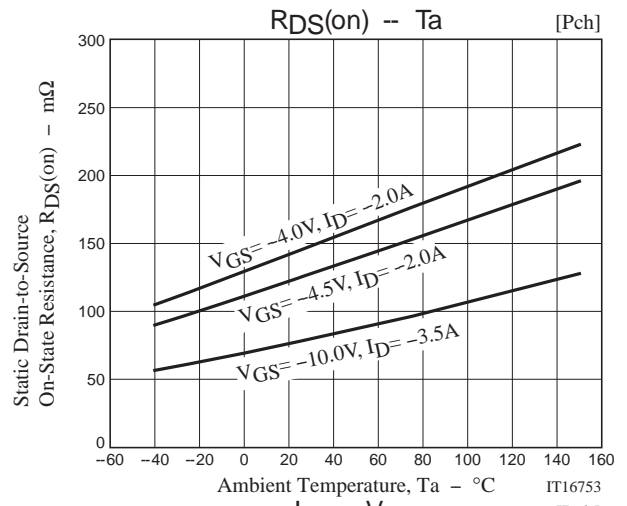
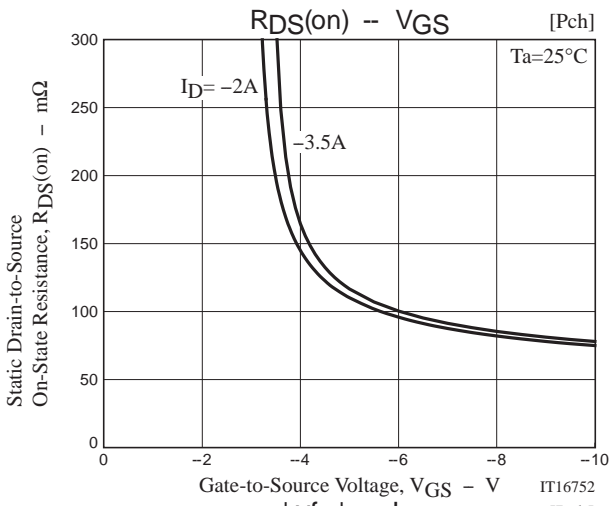


Ordering Information

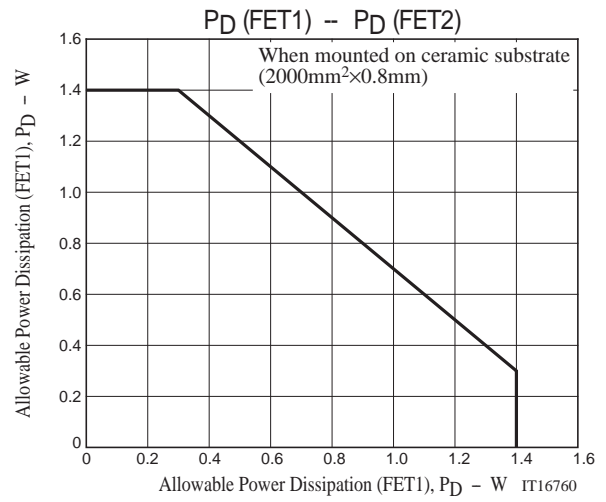
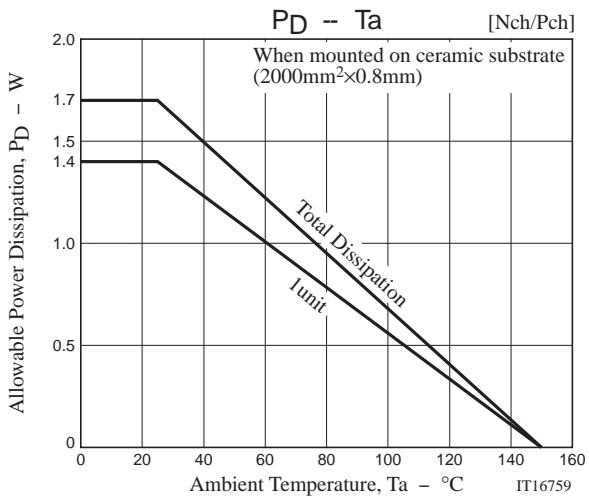
Device	Package	Shipping	memo
FW344A-TL-2W	SOIC8	2,500pcs./reel	Pb Free and Halogen Free







FW344A



Taping Specification

FW344A-TL-2W

1. Packing Format

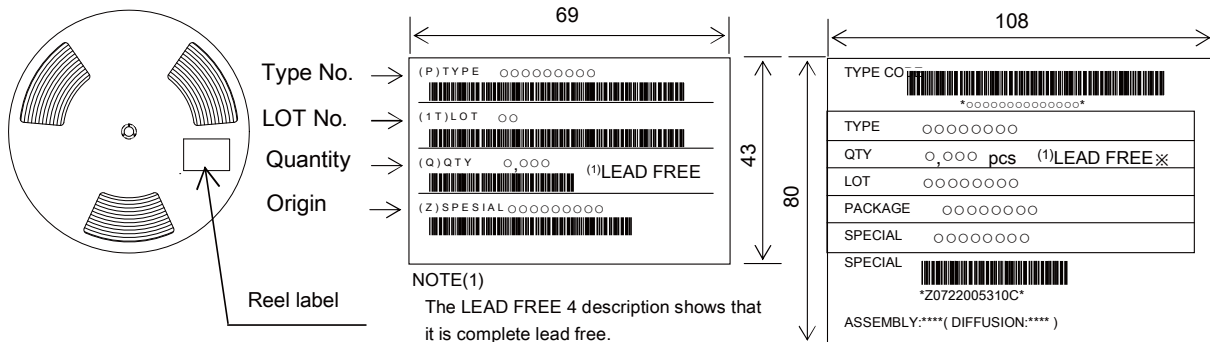
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX W206-112	Outer BOX W207-124
SOIC8	B202-101	2,500	12,500	25,000	5 reels contained Dimensions :mm(external) 340×95×340	2 inner boxes contained Dimensions :mm(external) 360×210×375

Packing method

Reel label, Inner box label
(unit: mm)

Outer box label

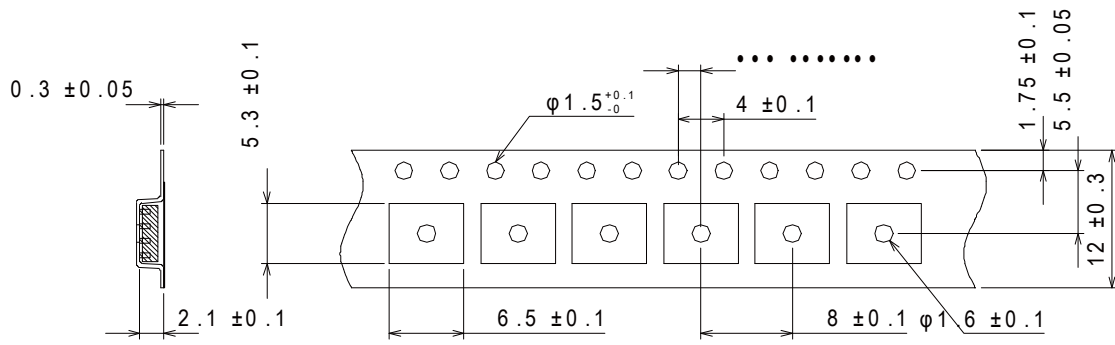
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.



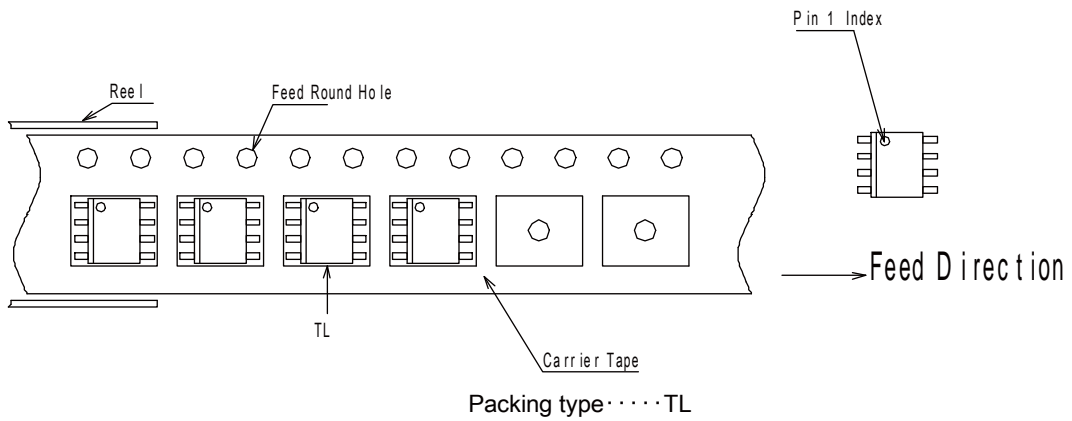
Label	JEITA Phase
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

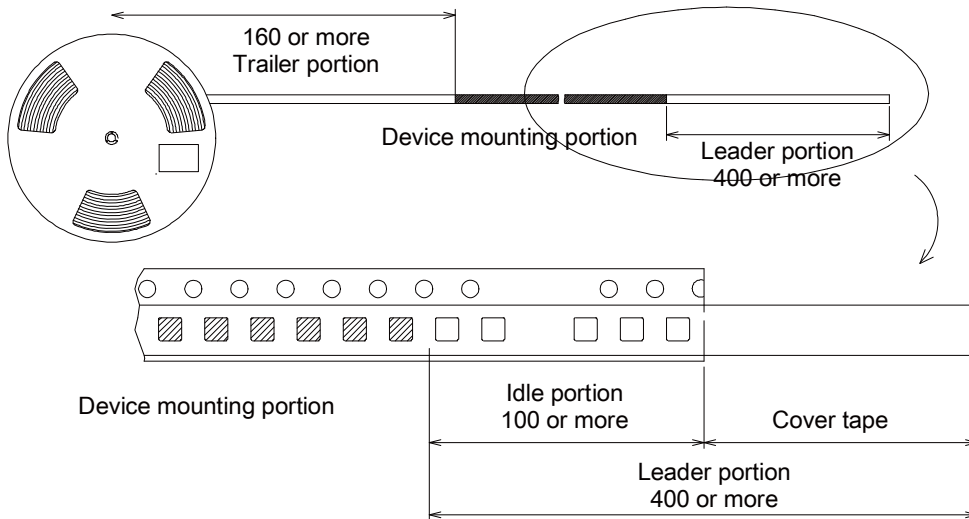
2-1. Carrier tape size (unit: mm)



2-2. Device placement direction



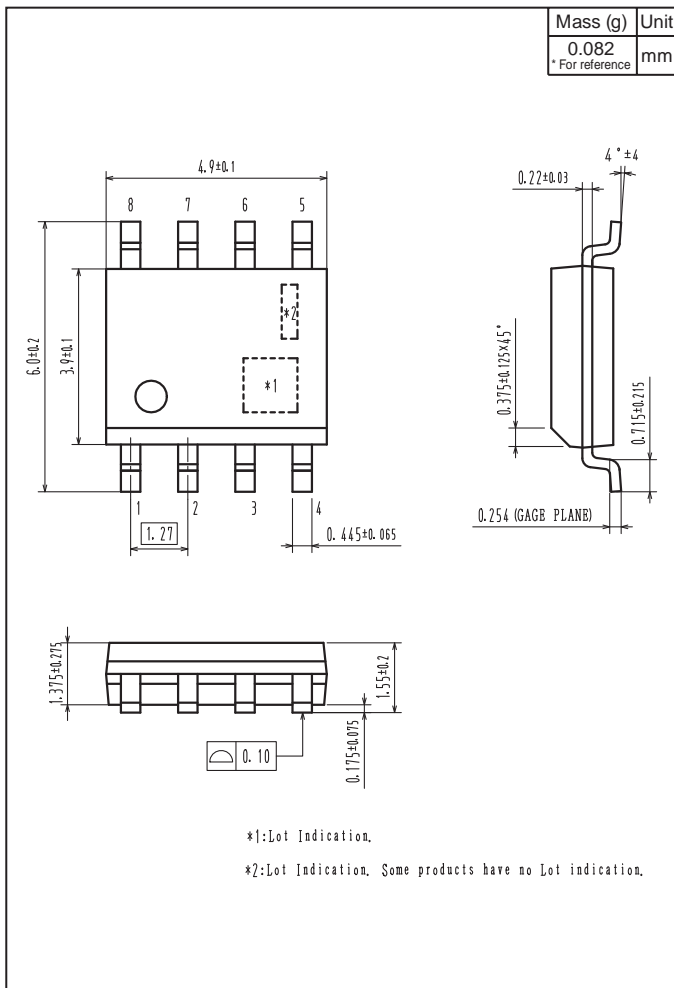
2-3. Leader portion and trailer portion (unit: mm)



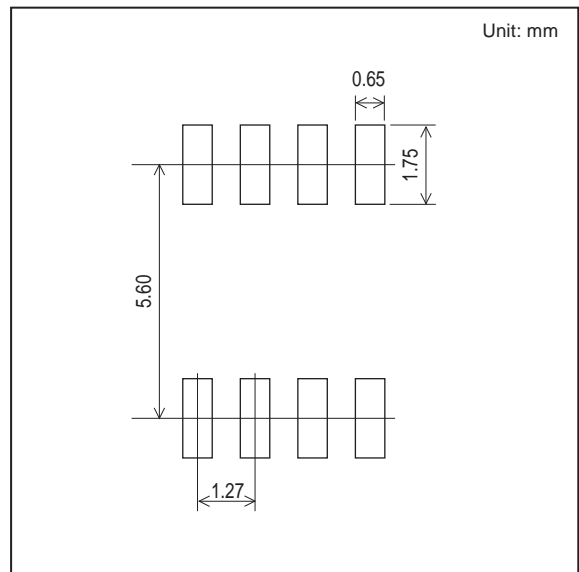
FW344A

Outline Drawing

FW344A-TL-2W



Land Pattern Example



Note on usage : Since the FW344A is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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