Ordering number : ENA1797A

BFL4026

N-Channel Power MOSFET
900V, 5A, 3.6Ω, TO-220F-3FS

ON Semiconductor®
http://onsemi.com

Features

- ON-resistance $R_{DS}(on)$=2.8Ω (typ.)
- 10V drive
- Input capacitance Ciss=650pF (typ.)

Specifications

Absolute Maximum Ratings at Ta=25°C

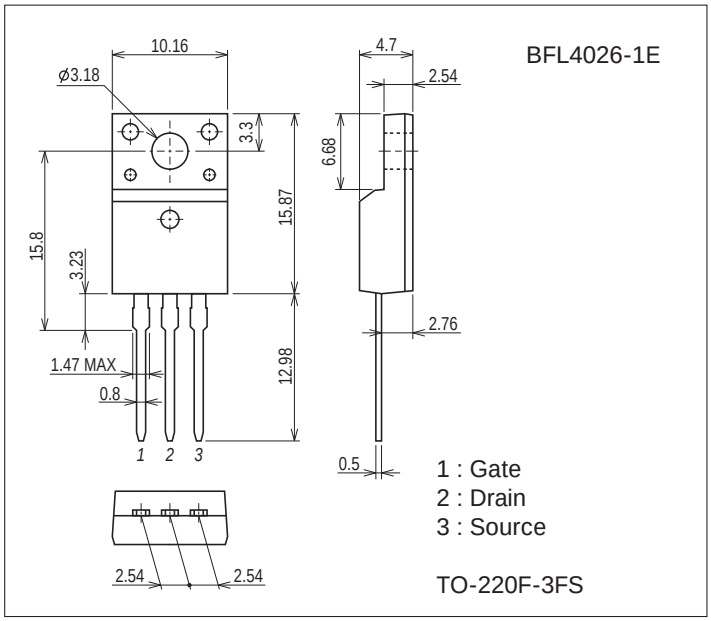
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		900	V
Gate-to-Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_{Dc}*1	Limited only by maximum temperature Tch=150°C	5	A
	I_{Dpack}*2	Tc=25°C (Our ideal heat dissipation condition)*3	3.5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	10	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (Our ideal heat dissipation condition)*3	35	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C
Avalanche Energy (Single Pulse) *4	E_{AS}		132	mJ
Avalanche Current *5	I_{AV}		5	A

Note :*1 Shows chip capability
*2 Package limited
*3 Our condition is radiation from backside.
The method is applying silicone grease to the backside of the device and attaching the device to water-cooled radiator made of aluminium.
*4 V_{DD}=50V, L=10mH, I_{AV}=5A (Fig.1)
*5 L≤10mH, single pulse

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

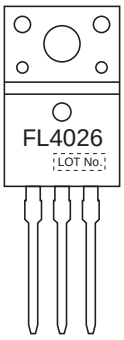
unit : mm (typ)
7528-001



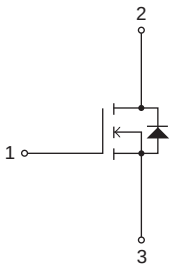
Product & Package Information

- Package : TO-220F-3FS
- JEITA, JEDEC : SC-67
- Minimum Packing Quantity : 50 pcs./magazine

Marking



Electrical Connection



Semiconductor Components Industries, LLC, 2013

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=10mA, V_{GS}=0V	900			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=720V, V_{GS}=0V			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±30V, V_{DS}=0V			±100	nA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	2.0		4.0	V
Forward Transfer Admittance	| yfs |	V_{DS}=20V, I_D=2.5A	1.4	2.8		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)	I_D=2.5A, V_{GS}=10V		2.8	3.6	Ω
Input Capacitance	Ciss	V_{DS}=30V, f=1MHz		650		pF
Output Capacitance	Coss			100		pF
Reverse Transfer Capacitance	Crss			35		pF
Turn-ON Delay Time	$t_{d(on)}$	See Fig.2		14		ns
Rise Time	t_r			37		ns
Turn-OFF Delay Time	$t_{d(off)}$			117		ns
Fall Time	t_f			39		ns
Total Gate Charge	Qg	V_{DS}=200V, V_{GS}=10V, I_D=5A		33		nC
Gate-to-Source Charge	Qgs			5.3		nC
Gate-to-Drain “Miller” Charge	Qgd			16.5		nC
Diode Forward Voltage	V_{SD}	I_S=5A, V_{GS}=0V		0.85	1.2	V
Reverse Recovery Time	t_{rr}	See Fig.3		720		ns
Reverse Recovery Charge	Q_{rr}	I_S=5A, V_{GS}=0V, di/dt=100A/μs		4700		nC

Fig.1 Avalanche Resistance Test Circuit

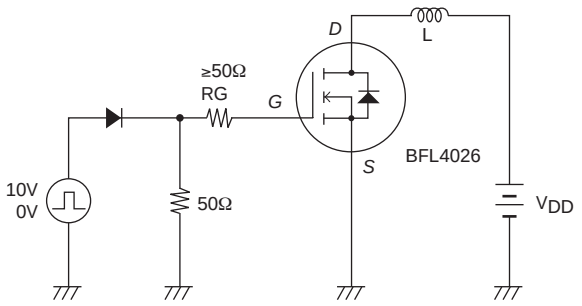


Fig.2 Switching Time Test Circuit

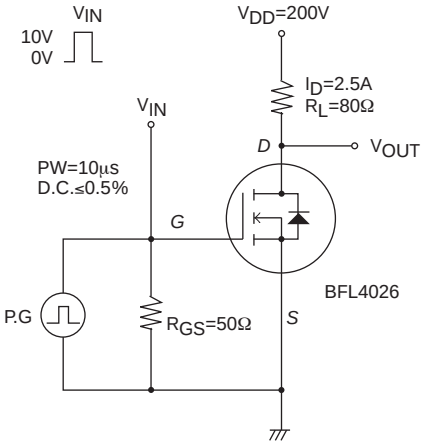
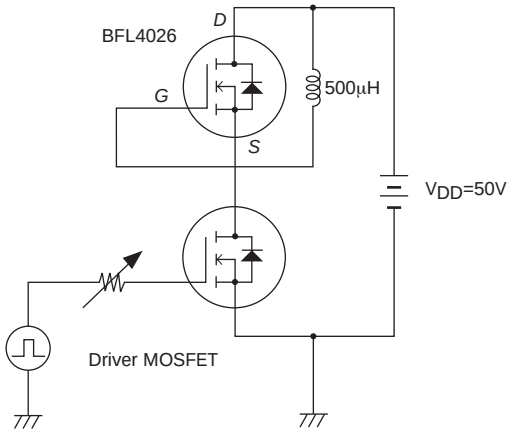
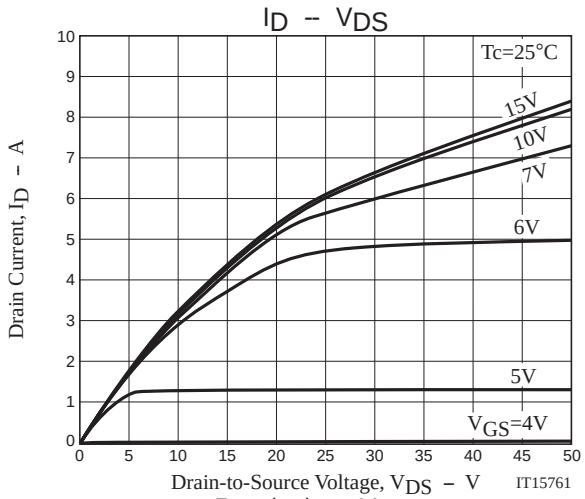


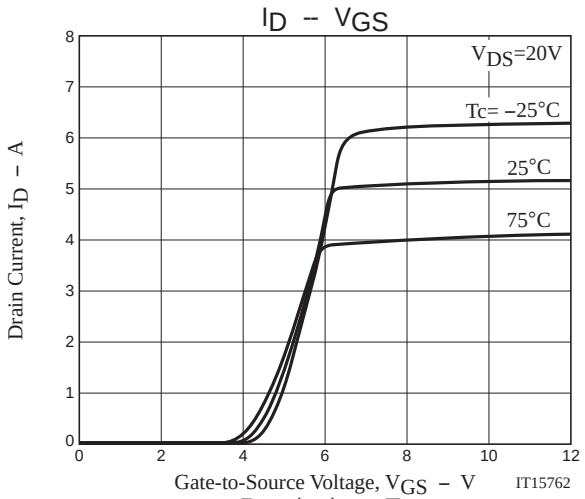
Fig.3 Reverse Recovery Time Test Circuit

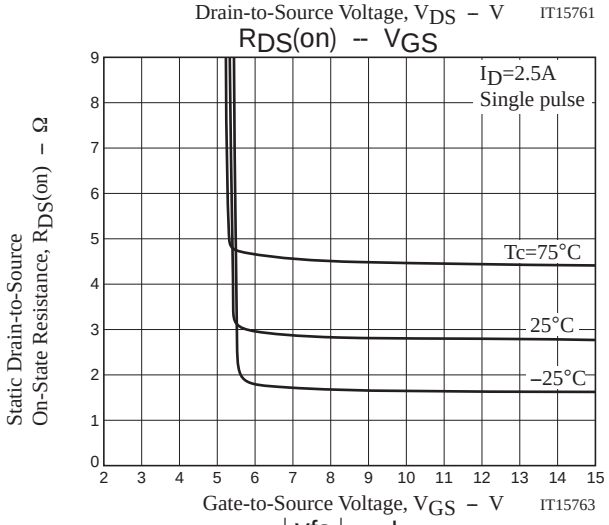


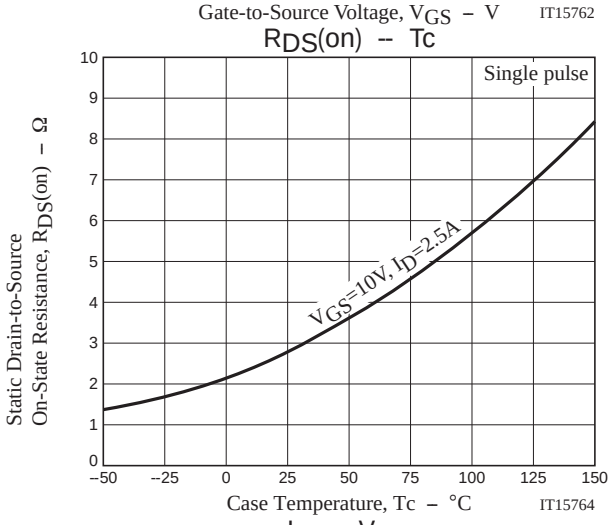
Ordering Information

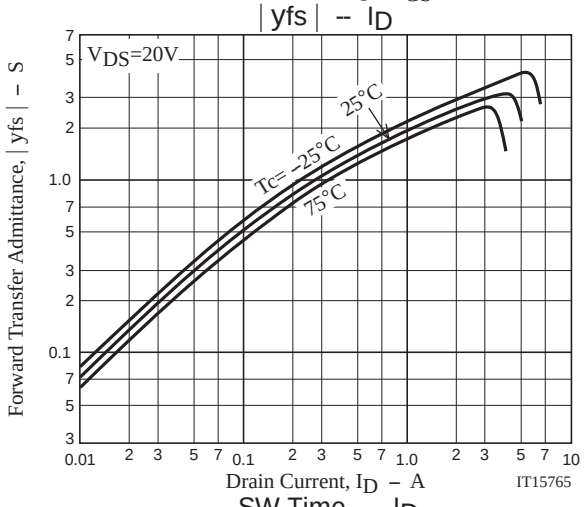
Device	Package	Shipping	memo
BFL4026-1E	TO-220F-3FS	50pcs./magazine	Pb Free

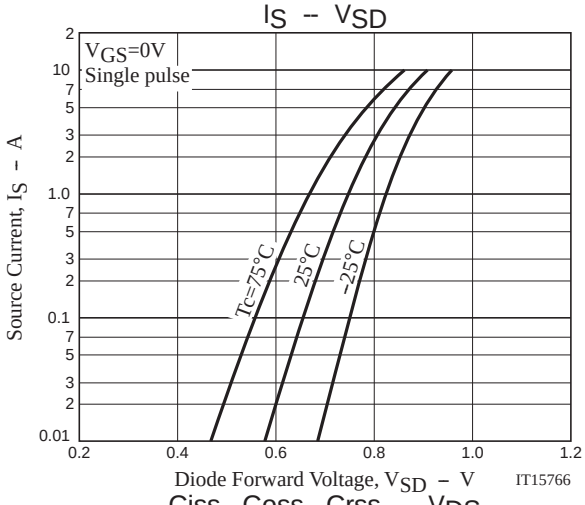

ID -- VDS
Tc=25°C
15V
10V
7V
6V
5V
VGS=4V
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT15761

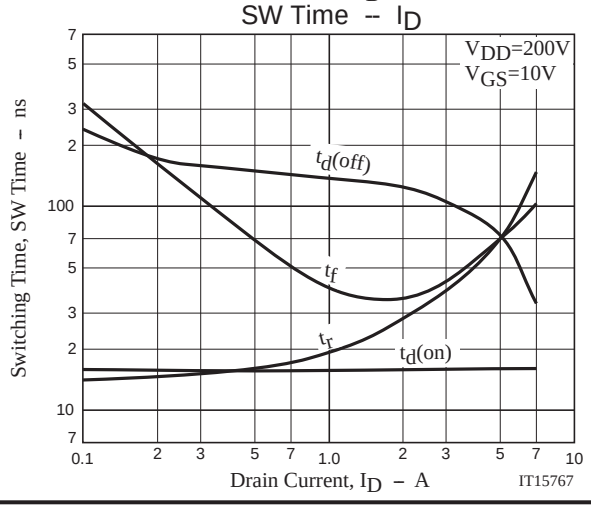

ID -- VGS
VDS=20V
Tc= –25°C
25°C
75°C
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT15762

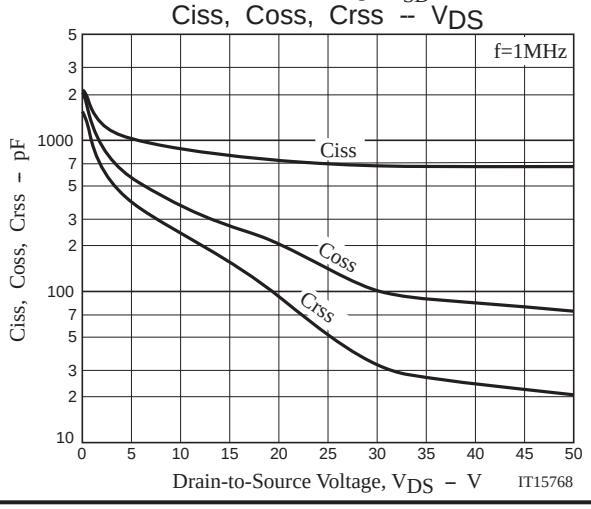

RDS(on) -- VGS
ID=2.5A
Single pulse
Tc=75°C
25°C
–25°C
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT15763

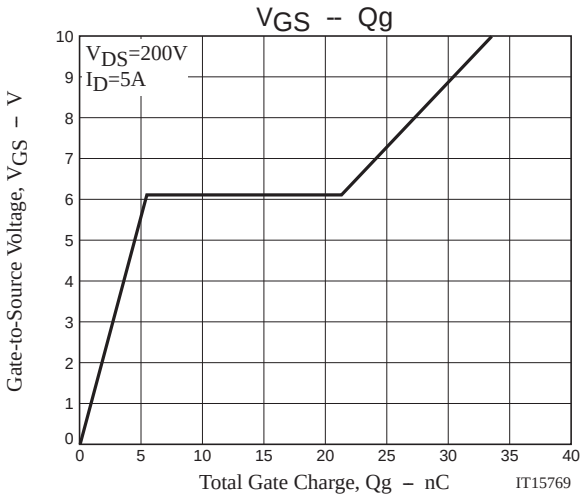

RDS(on) -- Tc
Single pulse
VGS=10V, ID=2.5A
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C
IT15764

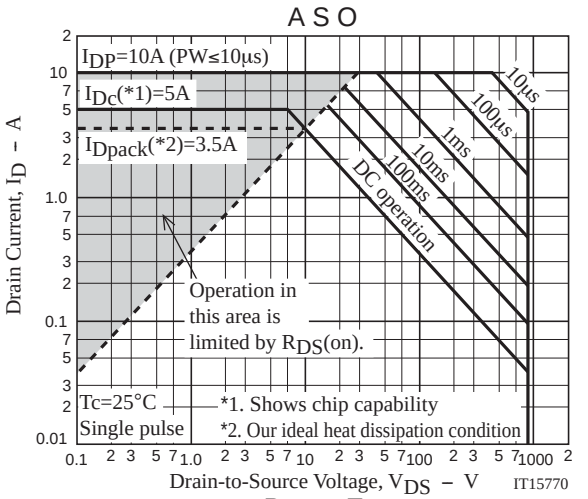

| yfs | -- ID
VDS=20V
25°C
Tc= –25°C
75°C
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT15765

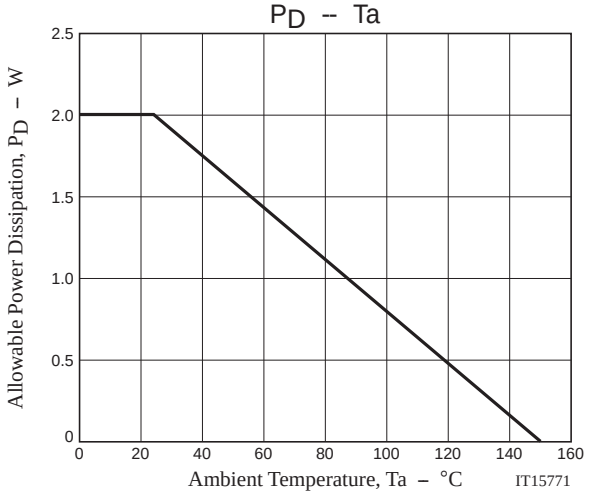

IS -- VSD
VGS=0V
Single pulse
Tc=75°C
25°C
–25°C
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT15766

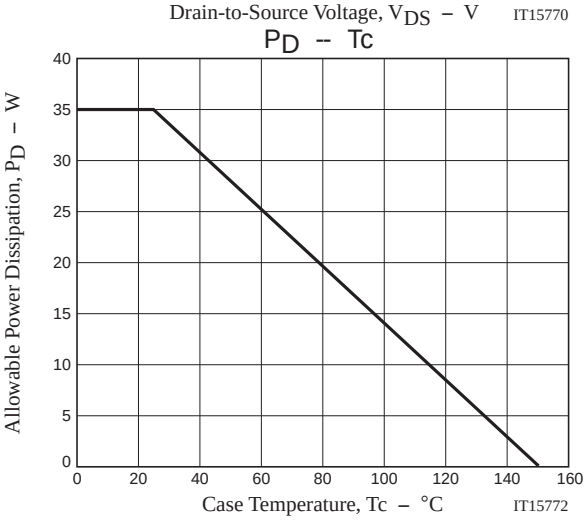

SW Time -- ID
VDD=200V
VGS=10V
td(off)
tf
tr
td(on)
Switching Time, SW Time – ns
Drain Current, ID – A
IT15767

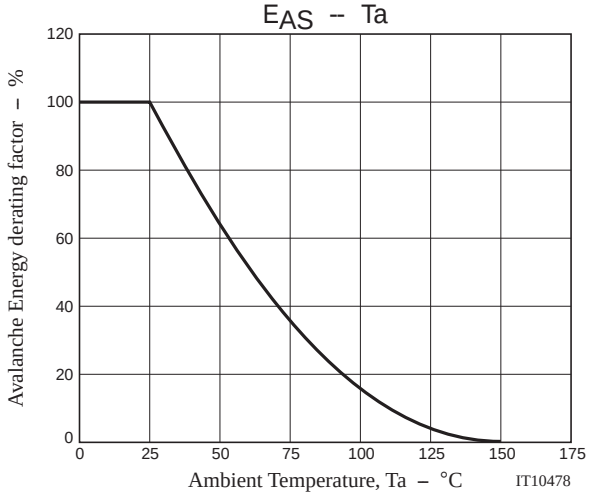

Ciss, Coss, Crss -- VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT15768


VGS – Qg
VDS=200V
ID=5A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT15769


A S O
IDP=10A (PW≤10μs)
IDC(*1)=5A
IDpack(*2)=3.5A
10μs
100μs
1ms
10ms
100ms
DC operation
Operation in this area is limited by RDS(on).
Tc=25°C
Single pulse
*1. Shows chip capability
*2. Our ideal heat dissipation condition
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT15770


PD – Ta
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT15771


PD – Tc
Allowable Power Dissipation, PD – W
Case Temperature, Tc – °C
IT15772


EAS – Ta
Avalanche Energy derating factor – %
Ambient Temperature, Ta – °C
IT10478

Magazine Specification

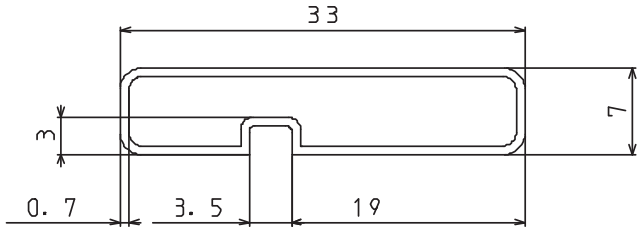
BFL4026-1E

1. Packing Format

Package Name	Magazine Name	Maximum Number of devices contained (pcs)			Packing format	
		Magazine	Inner box	Outer box	Inner BOX	Outer BOX
TO-220F-3FS	TO-220F	50	1,000	4,000	SPD-0V0001 20 magazines contained Dimensions:mm (external) 568×150×55	SPT-081029 4 inner boxes contained Dimensions:mm (external) 590×225×178

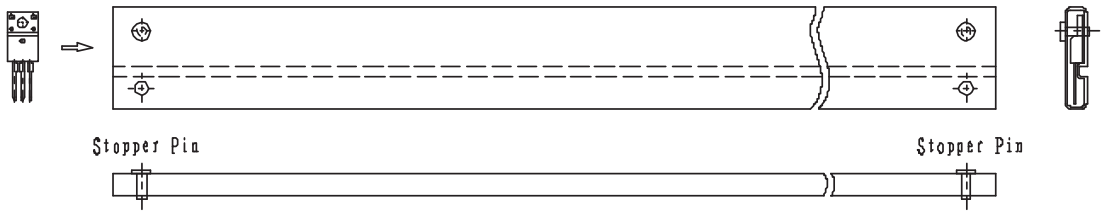
2. Magazine dimensions

(unit:mm)

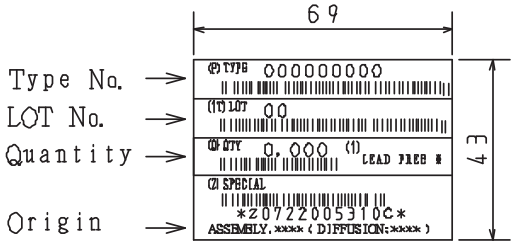


Tolerance=±0.3mm
Thickness=0.7±0.2mm
Length =532.5±2mm
Material =PVC (Antistatic treatment)

3. Storage method to magazine

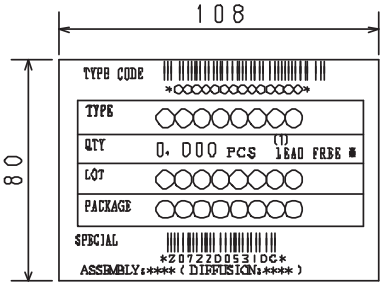


4. Inner box label (unit:mm)



5. Outer box label (unit:mm)

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

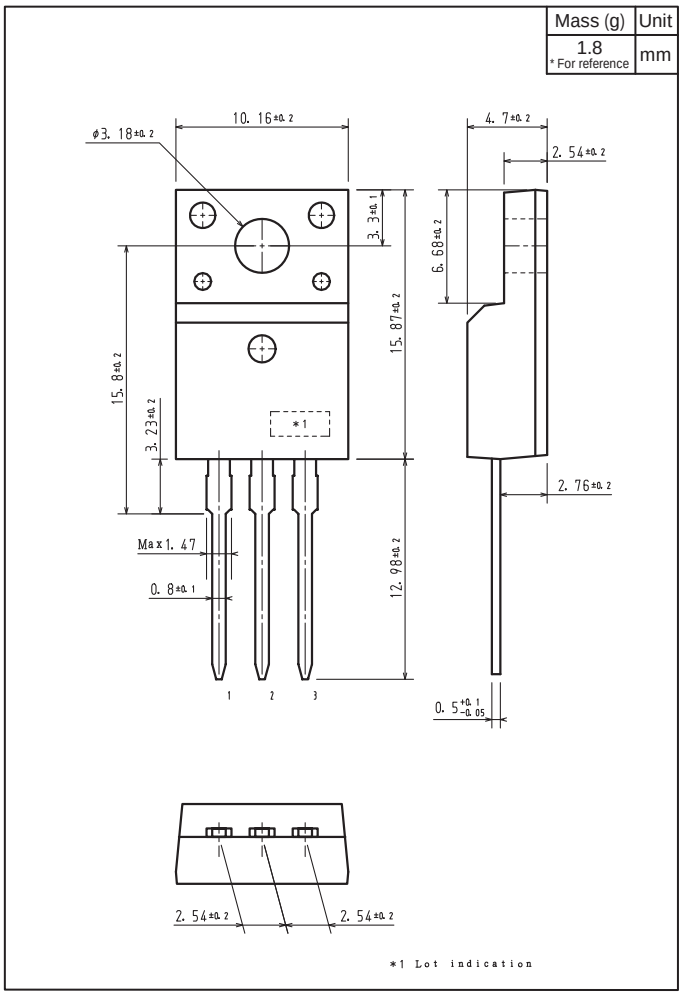


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A

Outline Drawing

BFL4026-1E



Note on usage : Since the BFL4026 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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