Ordering number : ENA1831A

BFL4037

N-Channel Power MOSFET
500V, 16A, 0.43Ω, TO-220F-3FS

ON Semiconductor®

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Features

- ON-resistance R_{DS}(on)=0.33Ω (typ.)
- 10V drive
- Input capacitance Ciss=1200pF (typ.)

Specifications

Absolute Maximum Ratings at Ta=25°C

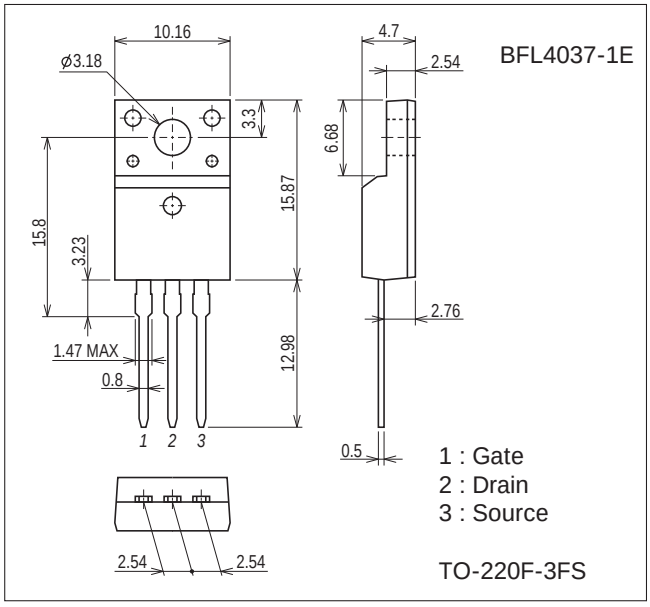
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		500	V
Gate to Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_{Dc}*1	Limited only by maximum temperature Tch=150°C	16	A
	I_{Dpack}*2	Tc=25°C (Our ideal heat dissipation condition)*3	11	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (Our ideal heat dissipation condition)*3	40	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C
Avalanche Energy (Single Pulse) *4	E_{AS}		142	mJ
Avalanche Current *5	I_{AV}		16	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=1mH, I_{AV}=16A (Fig.1)
*5 L≤1mH, 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

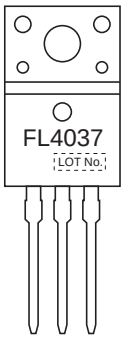
unit : mm (typ)
7528-001



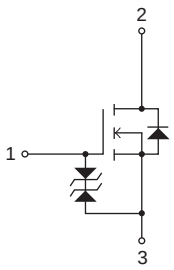
Ordering & Package Information

Device	Package	Shipping	memo
BFL4037-1E	TO-220F-3FS SC-67	50 pcs./tube	Pb-Free

Marking



Electrical Connection



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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	500			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=400V, V_{GS}=0V			100	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±24V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	3		5	V
Forward Transfer Admittance	| yfs |	V_{DS}=10V, I_D=8A	4.5	9		S
Static Drain to Source On-State Resistance	R_{DS}(on)	I_D=8A, V_{GS}=10V		0.33	0.43	Ω
Input Capacitance	Ciss	V_{DS}=30V, f=1MHz		1200		pF
Output Capacitance	Coss			250		pF
Reverse Transfer Capacitance	Crss			55		pF
Turn-ON Delay Time	t_d(on)	See Fig.2		26.5		ns
Rise Time	t_r			78		ns
Turn-OFF Delay Time	t_d(off)			146		ns
Fall Time	t_f			57		ns
Total Gate Charge	Qg	V_{DS}=200V, V_{GS}=10V, I_D=16A		48.6		nC
Gate to Source Charge	Qgs			8.2		nC
Gate to Drain "Miller" Charge	Qgd			27.4		nC
Diode Forward Voltage	V_{SD}	I_S=16A, V_{GS}=0V		0.95	1.3	V
Reverse Recovery Time	t_{rr}	See Fig.3		600		ns
Reverse Recovery Charge	Qrr	I_S=16A, V_{GS}=0V, di/dt=100A/μs		5000		nC

Fig.1 Unclamped Inductive Switching Test Circuit

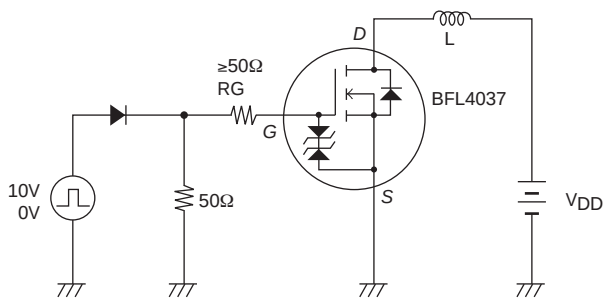


Fig.2 Switching Time Test Circuit

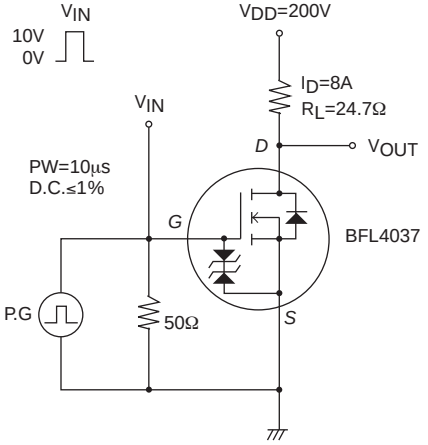
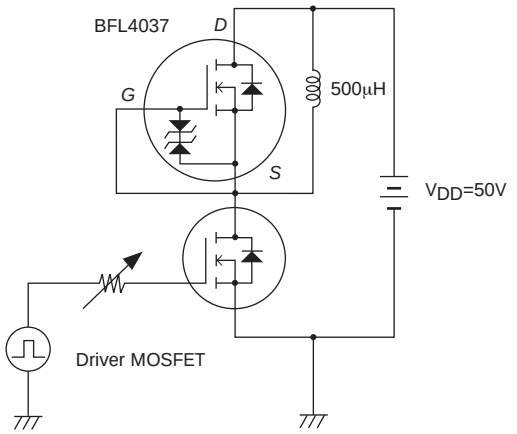


Fig.3 Reverse Recovery Time Test Circuit



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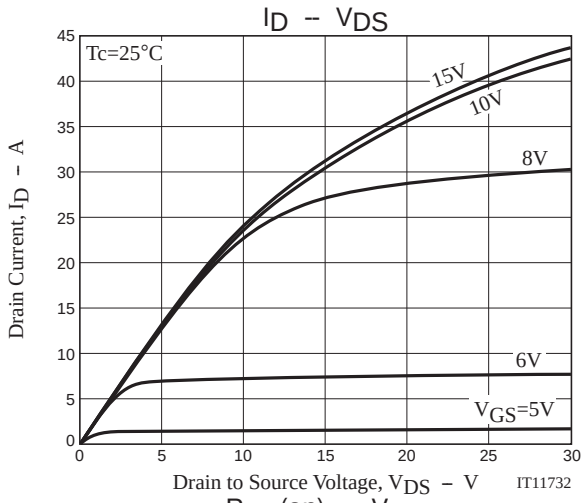

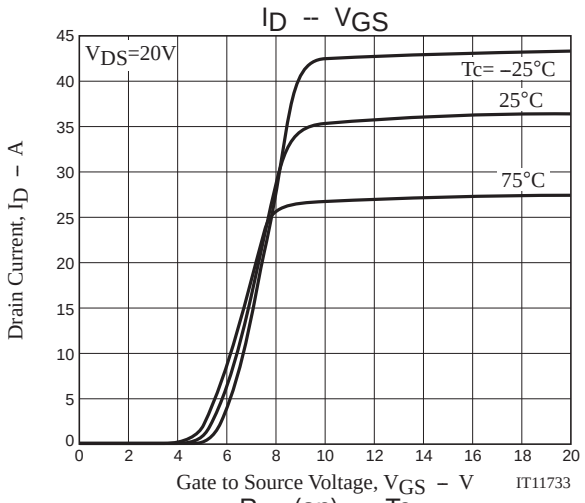

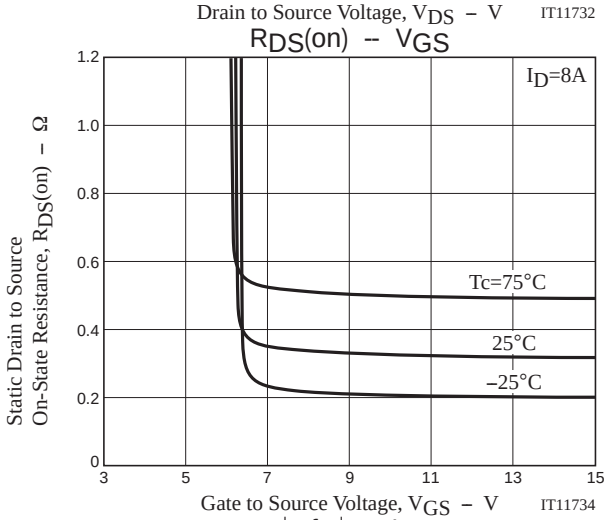

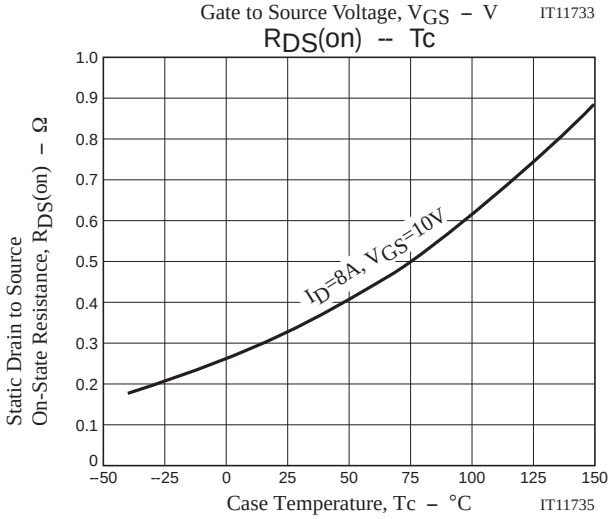

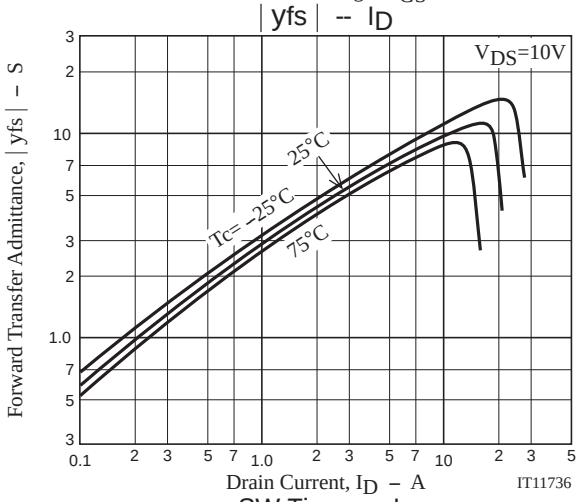

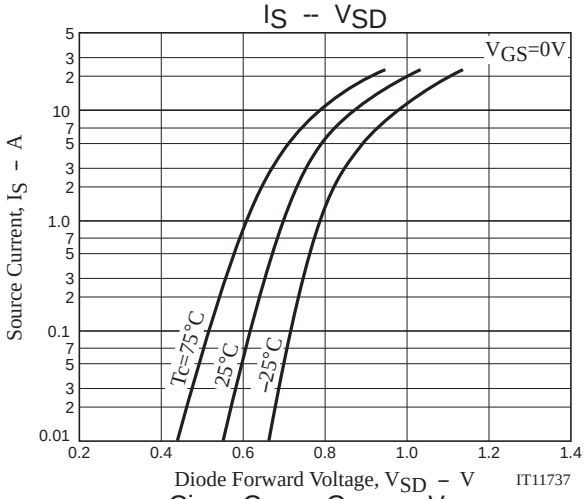

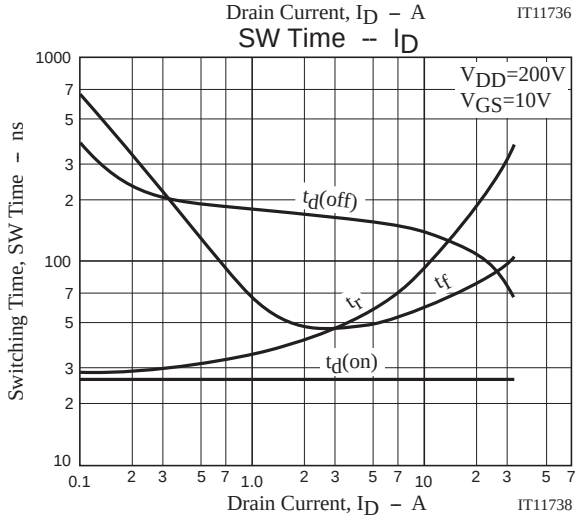

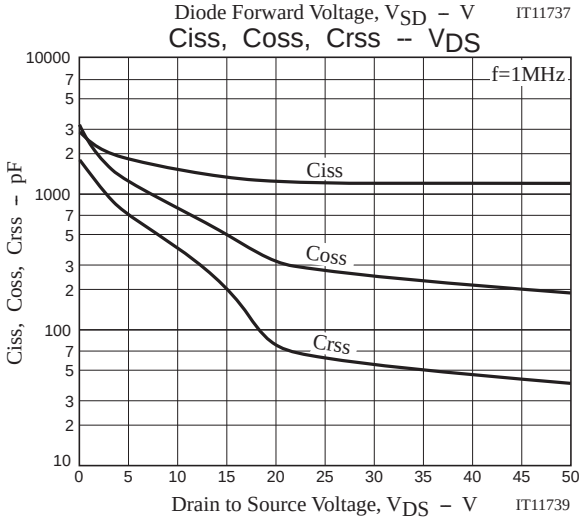

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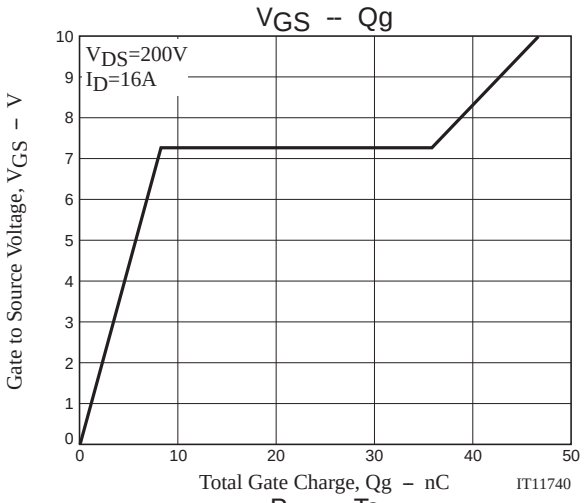

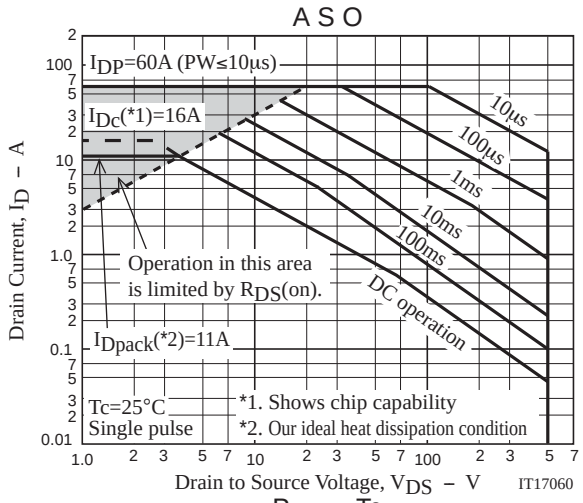

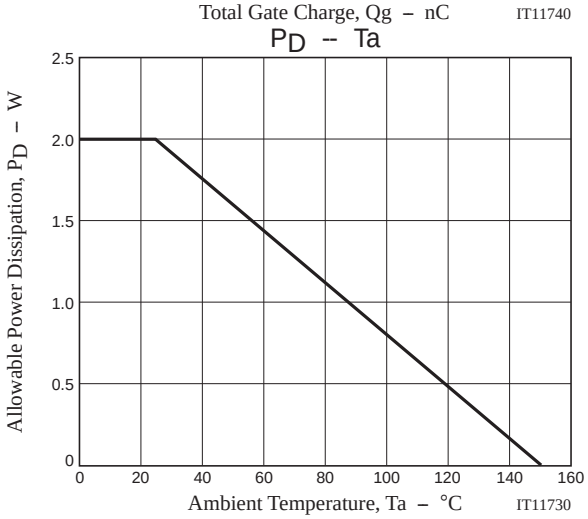

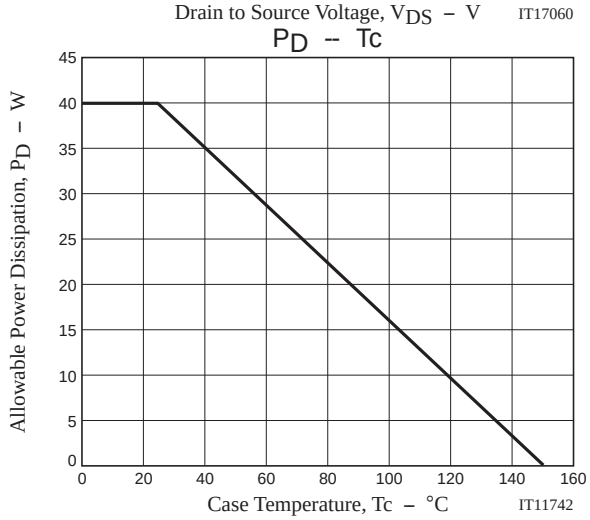

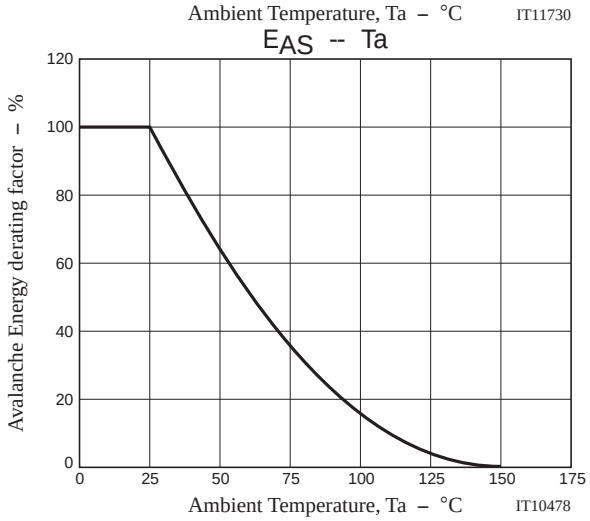

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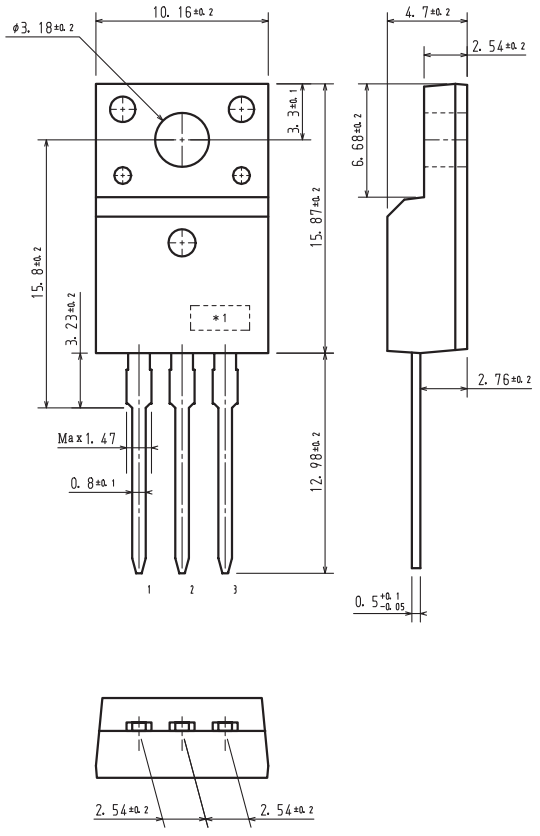
Outline Drawing

BFL4037-1E

Mass (g)	Unit
1.8 * For reference	mm



*1 Lot indication

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Note on usage : Since the BFL4037 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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