Ordering number : ENA1830A

BFL4036

N-Channel Power MOSFET
500V, 14A, 0.52Ω, TO-220F-3FS

ON Semiconductor®

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Features

- ON-resistance R_{DS}(on)=0.4Ω (typ.)
- 10V drive
- Input capacitance Ciss=1000pF (typ.)

Specifications

Absolute Maximum Ratings at Ta=25°C

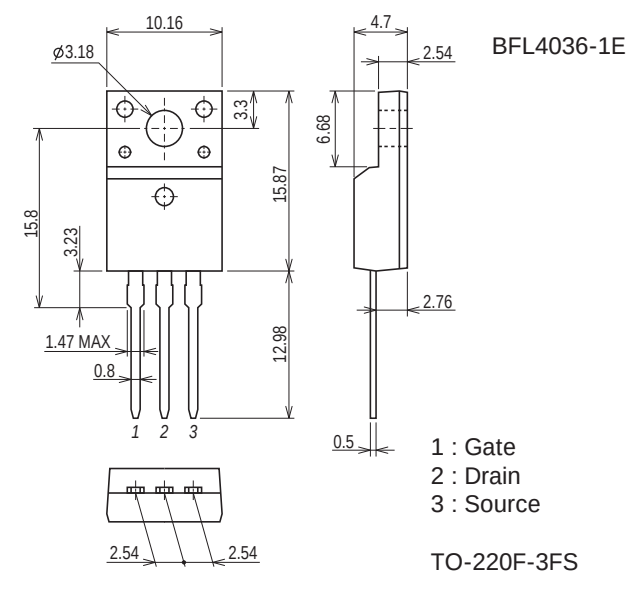
Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		500	V
Gate to Source Voltage	V_{GSS}		±30	V
Drain Current (DC)	I_{Dc}*1	Limited only by maximum temperature Tch=150°C	14	A
	I_{Dpack}*2	Tc=25°C (Our ideal heat dissipation condition)*3	9.6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	50	A
Allowable Power Dissipation	P_D		2.0	W
		Tc=25°C (Our ideal heat dissipation condition)*3	37	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C
Avalanche Energy (Single Pulse) *4	E_{AS}		109	mJ
Avalanche Current *5	I_{AV}		14	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}=14A (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

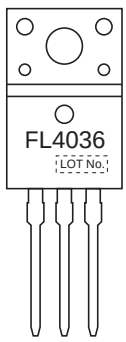
unit : mm (typ)
7528-001



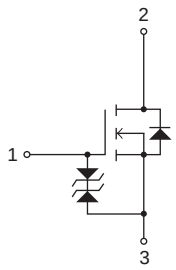
Ordering & Package Information

Device	Package	Shipping	memo
BFL4036-1E	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=7A	3.5	7		S
Static Drain to Source On-State Resistance	R_{DS}(on)	I_D=7A, V_{GS}=10V		0.4	0.52	Ω
Input Capacitance	Ciss	V_{DS}=30V, f=1MHz		1000		pF
Output Capacitance	Coss			200		pF
Reverse Transfer Capacitance	Crss			44		pF
Turn-ON Delay Time	t_d(on)	See Fig.2		22		ns
Rise Time	t_r			66		ns
Turn-OFF Delay Time	t_d(off)			117		ns
Fall Time	t_f			46		ns
Total Gate Charge	Qg	V_{DS}=200V, V_{GS}=10V, I_D=14A		38.4		nC
Gate to Source Charge	Qgs			6.7		nC
Gate to Drain "Miller" Charge	Qgd			22.1		nC
Diode Forward Voltage	V_{SD}	I_S=14A, V_{GS}=0V		0.95	1.3	V
Reverse Recovery Time	t_{rr}	See Fig.3		520		ns
Reverse Recovery Charge	Qrr	I_S=14A, V_{GS}=0V, di/dt=100A/μs		4200		nC

Fig.1 Unclamped Inductive Switching Test Circuit

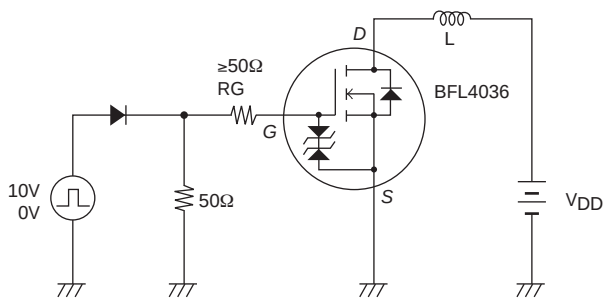


Fig.2 Switching Time Test Circuit

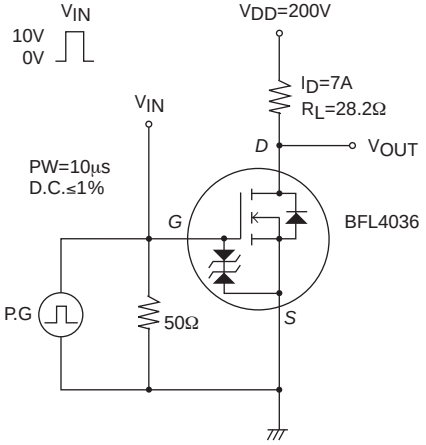
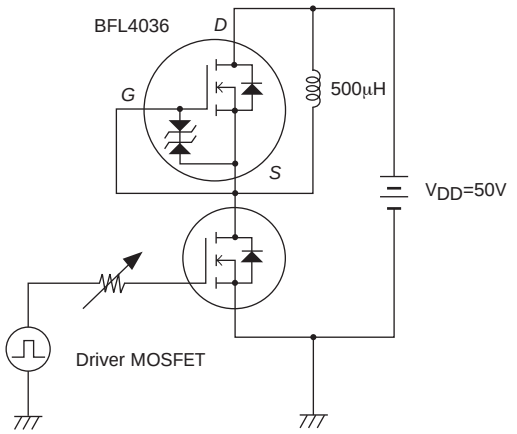


Fig.3 Reverse Recovery Time Test Circuit



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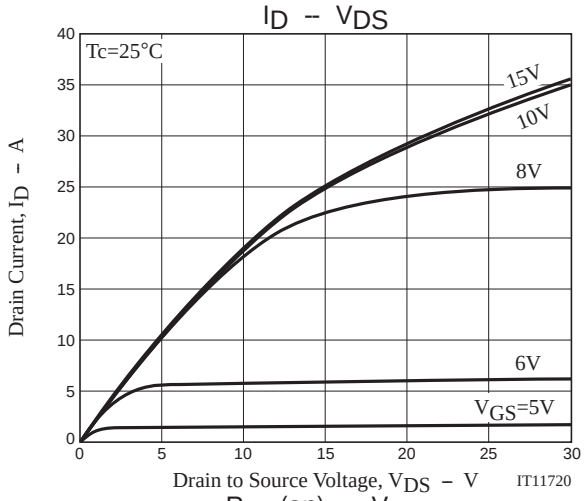

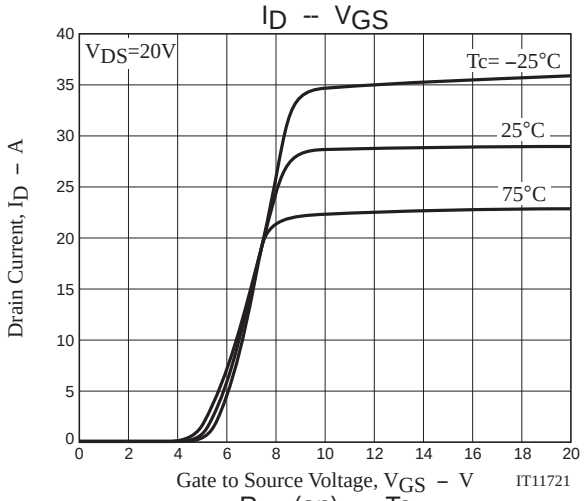

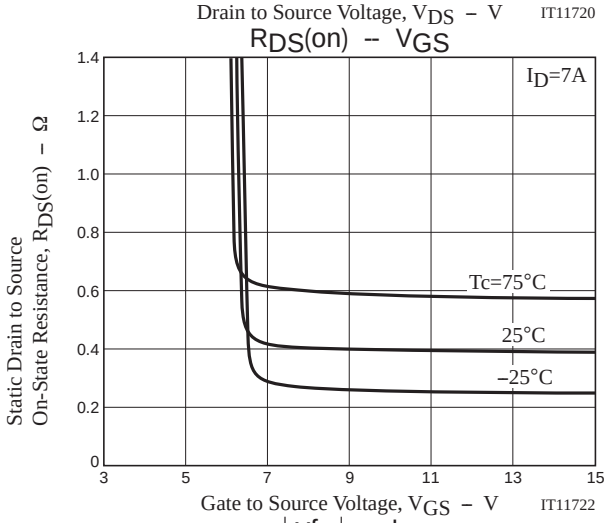

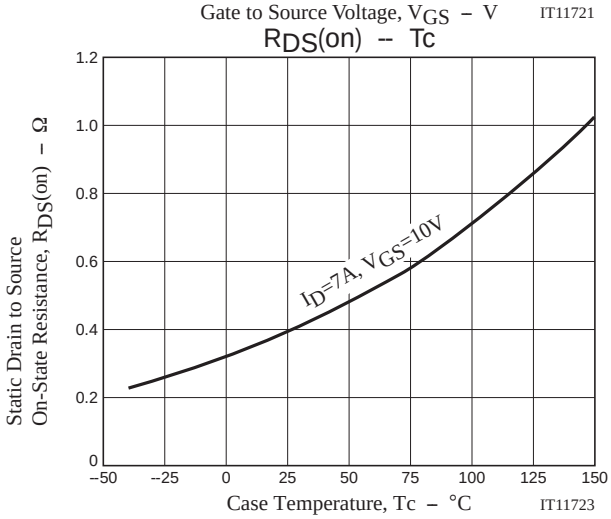

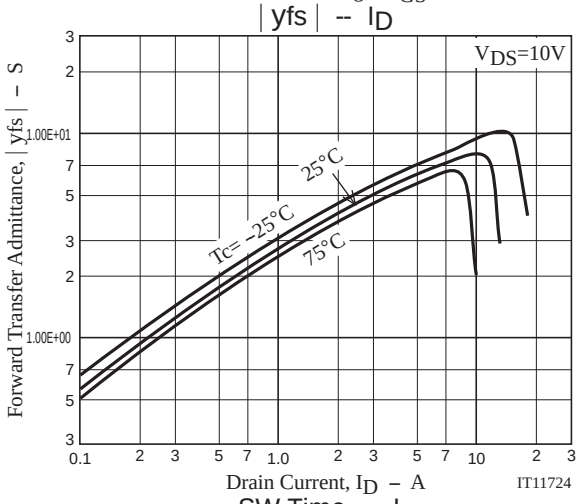

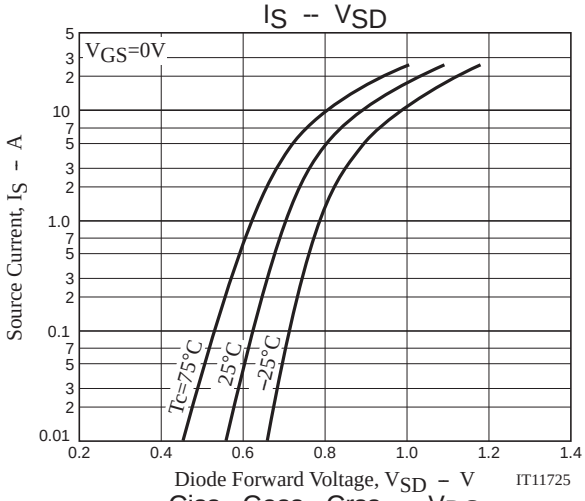

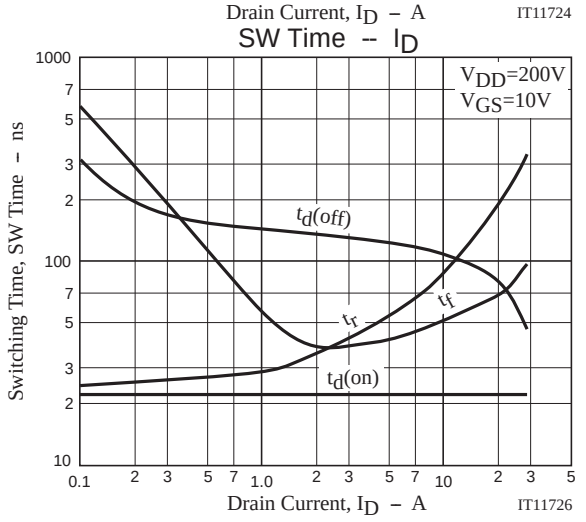

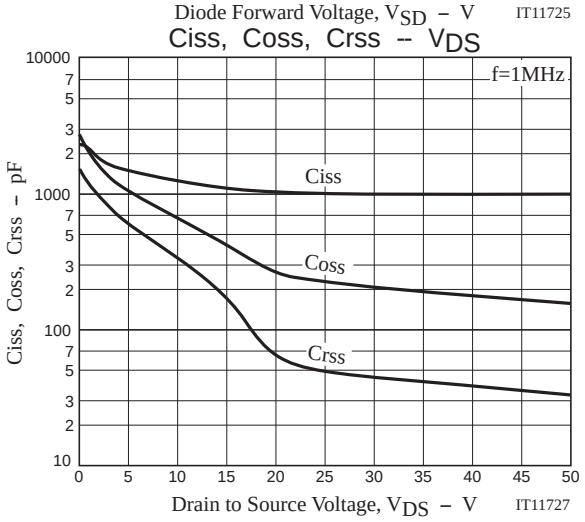

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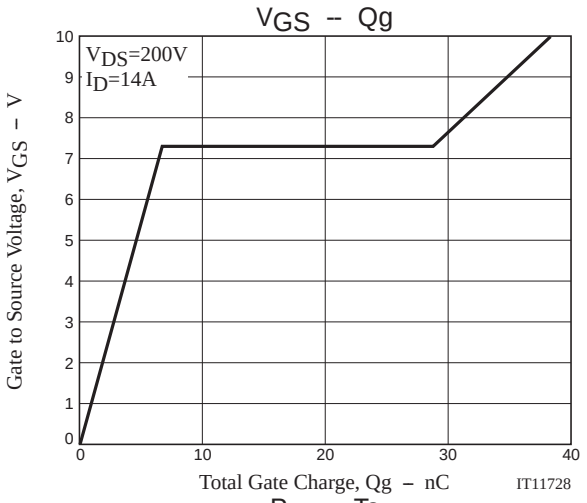

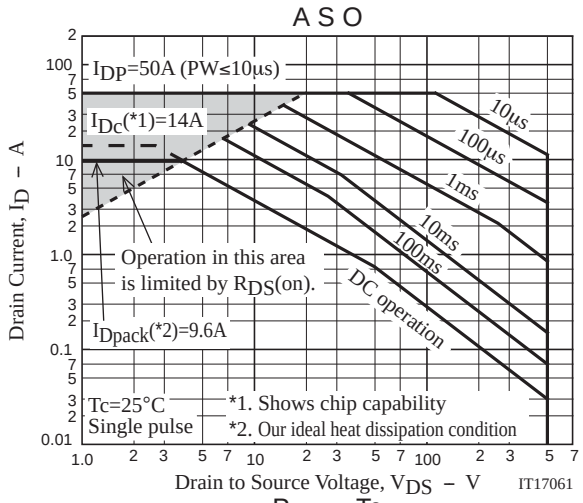

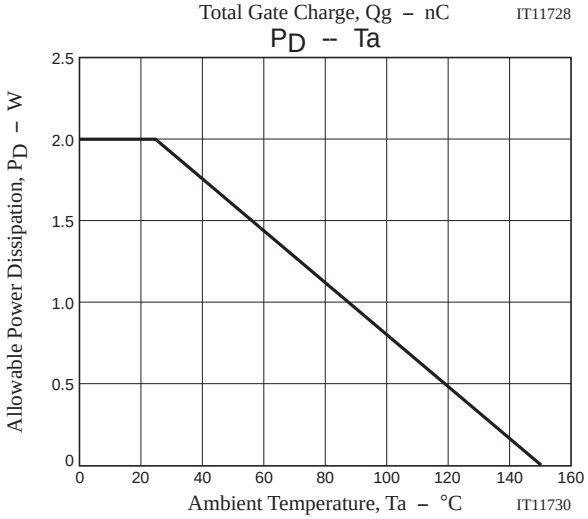

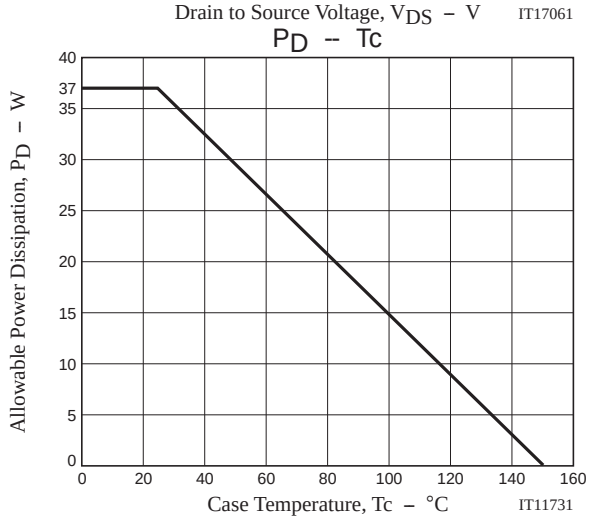

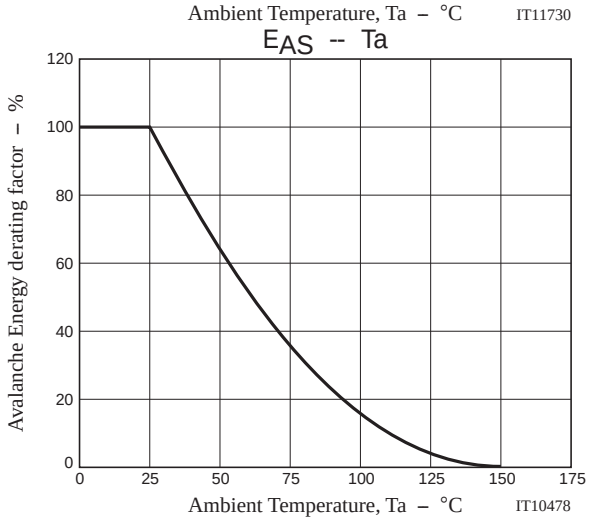

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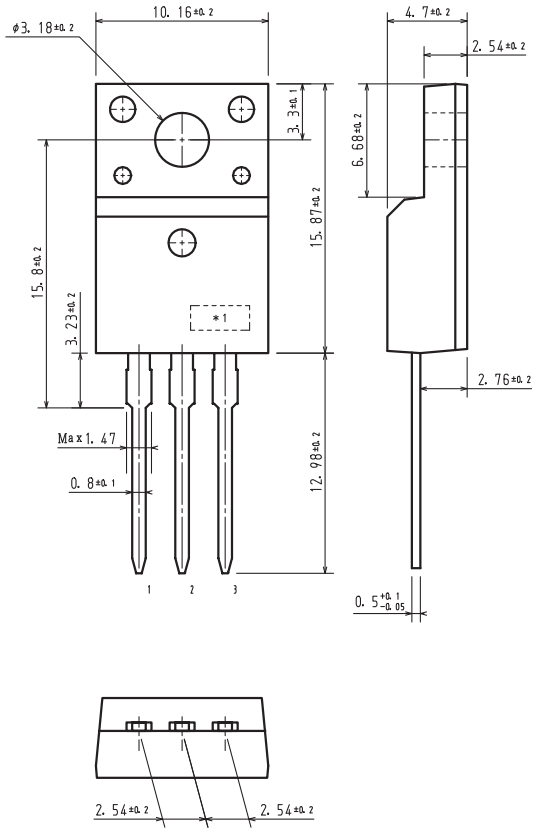
Outline Drawing

BFL4036-1E

Mass (g)	Unit
1.8 * For reference	mm



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Note on usage : Since the BFL4036 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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