



# BMS4007

## N-Channel Power MOSFET 75V, 60A, 7.8mΩ, TO-220ML(LS)

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### Features

- ON-resistance  $R_{DS(on)}=6m\Omega$  (typ.)
- Input capacitance  $C_{iss}=9700pF$  (typ.)
- 10V drive

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		75	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		60	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	240	A
Allowable Power Dissipation	PD		2.0	W
		$T_c=25^\circ C$	30	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$
Avalanche Energy (Single Pulse) *1	EAS		299	mJ
Avalanche Current *2	$I_{AV}$		48	A

Note : \*1  $V_{DD}=48V$ ,  $L=100\mu H$ ,  $I_{AV}=48A$  (Fig.1)

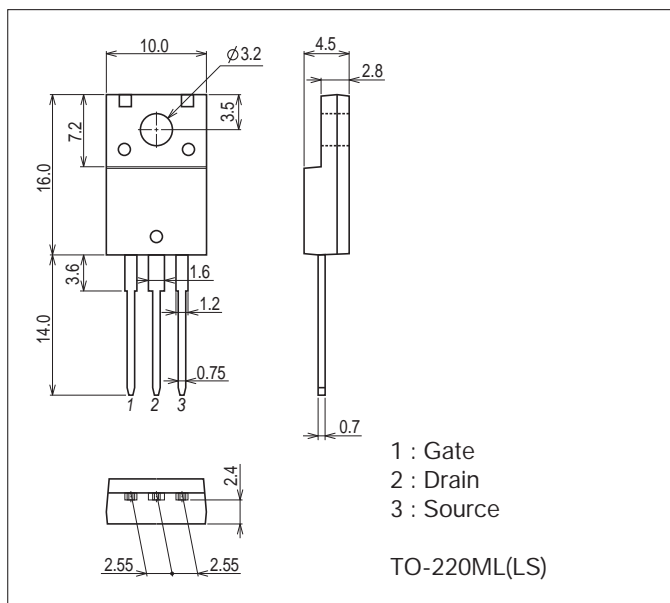
\*2  $L \leq 100\mu H$ , Single pulse

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)

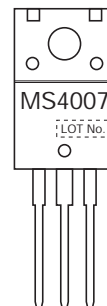
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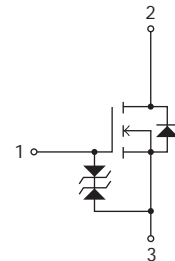
### Product & Package Information

- Package : TO-220ML(LS)
- JEITA, JEDEC : SC-67, SOT-186A
- Minimum Packing Quantity : 100 pcs./bag or 50pcs./magazine

### Marking



### Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	75			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=75V, V_{GS}=0V$			10	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2		4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=30A$		110		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=30A, V_{GS}=10V$		6	7.8	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		9700		pF
Output Capacitance	$C_{oss}$			540		pF
Reverse Transfer Capacitance	$C_{rss}$			360		pF
Turn-ON Delay Time	$t_{d(on)}$		See Fig.2		100	
Rise Time	$t_r$			180		ns
Turn-OFF Delay Time	$t_{d(off)}$			460		ns
Fall Time	$t_f$			160		ns
Total Gate Charge	$Q_g$	$V_{DS}=48V, V_{GS}=10V, I_D=60A$			160	
Gate-to-Source Charge	$Q_{gs}$			40		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			40		nC
Diode Forward Voltage	$V_{SD}$	$I_S=60A, V_{GS}=0V$		0.9	1.2	V
Reverse Recovery Time	$t_{rr}$	See Fig.3		70		ns
Reverse Recovery Charge	$Q_{rr}$	$I_S=60A, V_{GS}=0V, di/dt=100A/\mu s$		183		nC

Fig.1 Avalanche Resistance Test Circuit

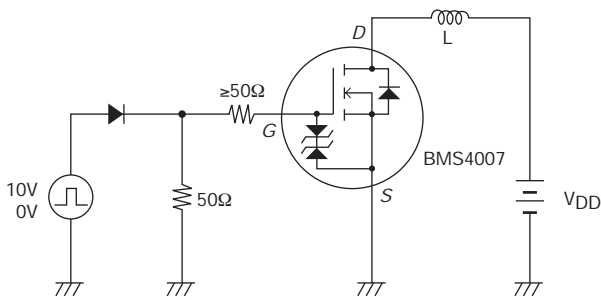


Fig.2 Switching Time Test Circuit

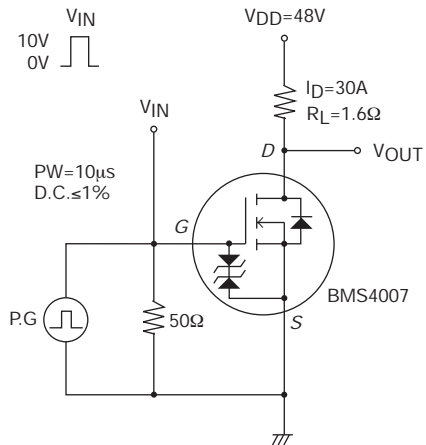
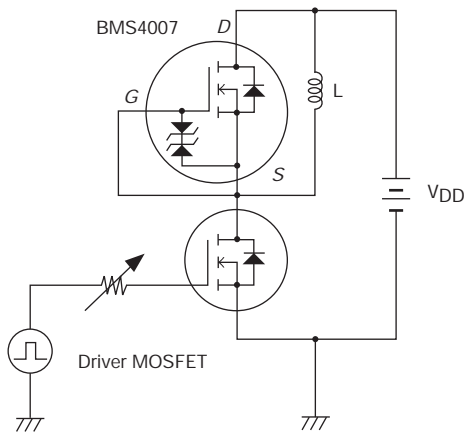
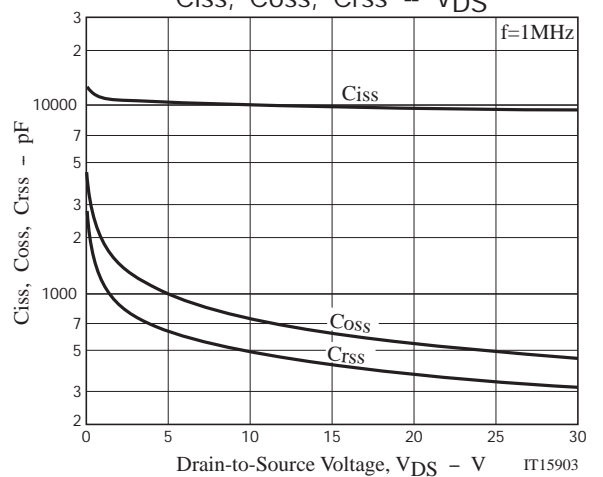
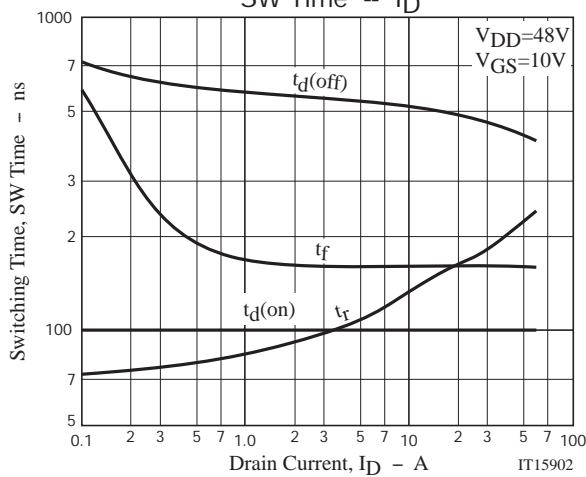
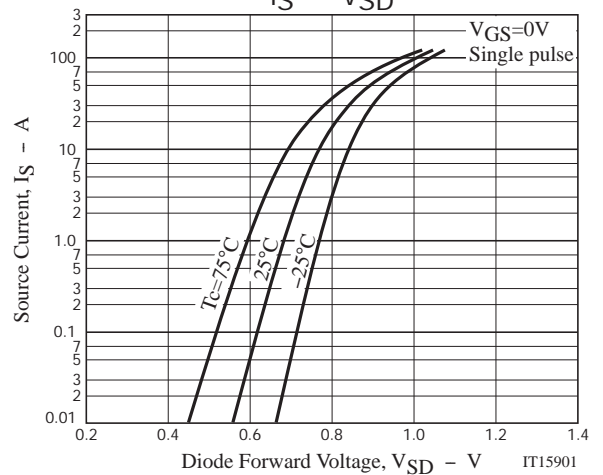
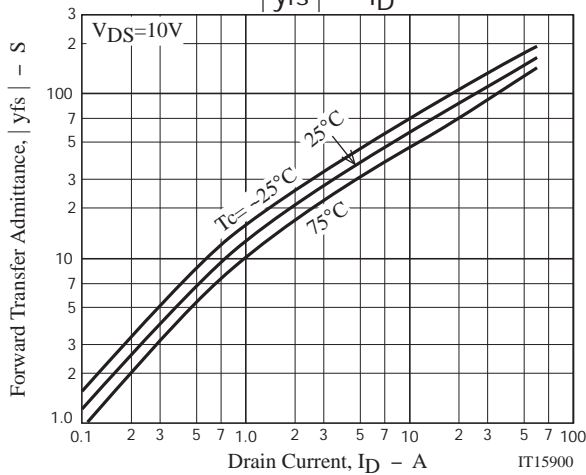
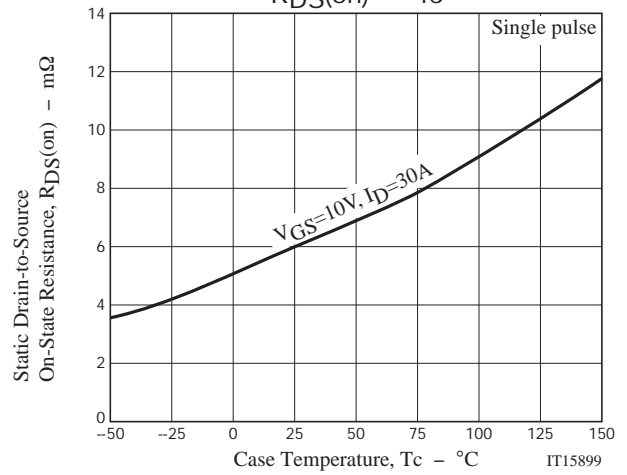
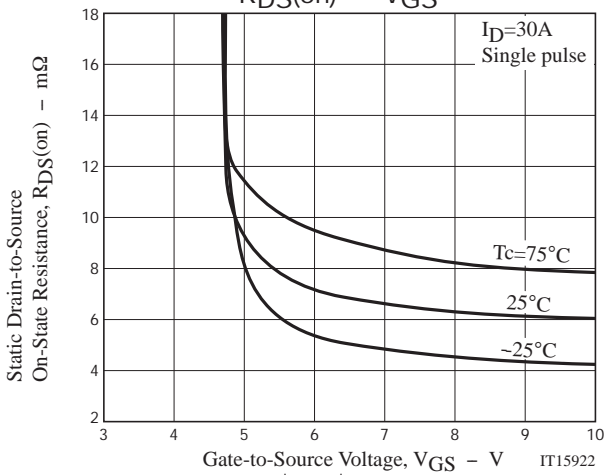
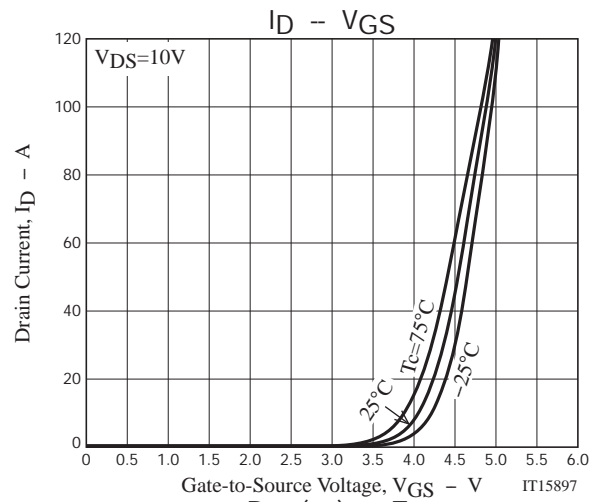
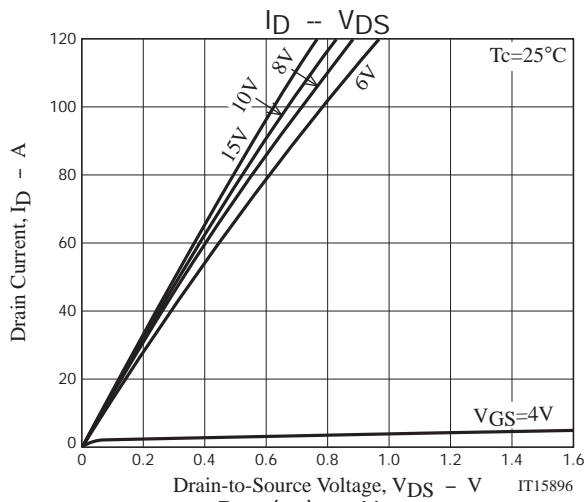
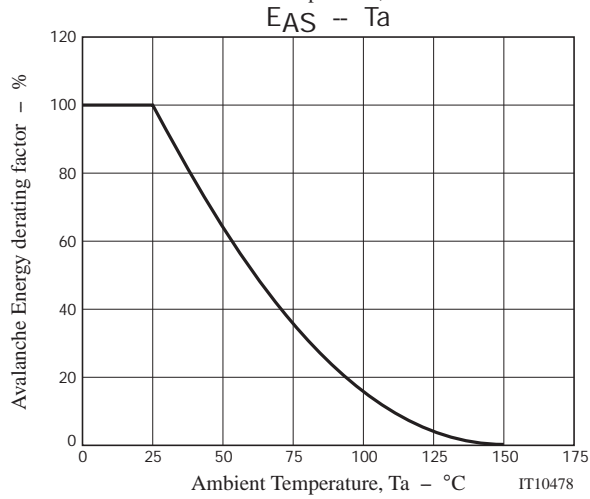
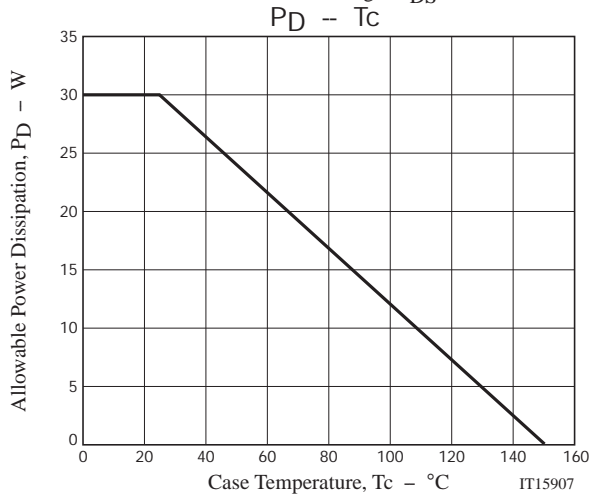
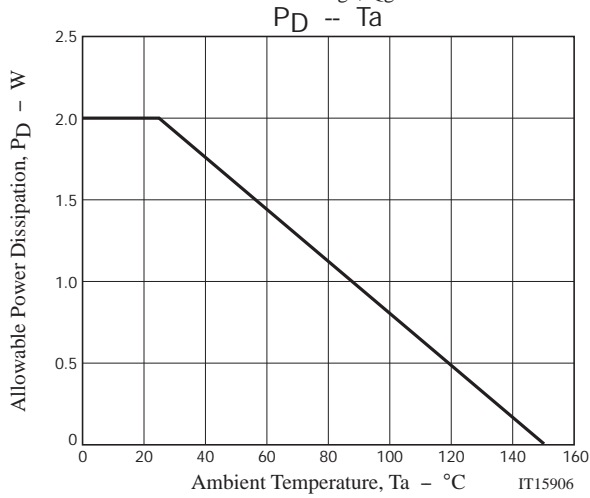
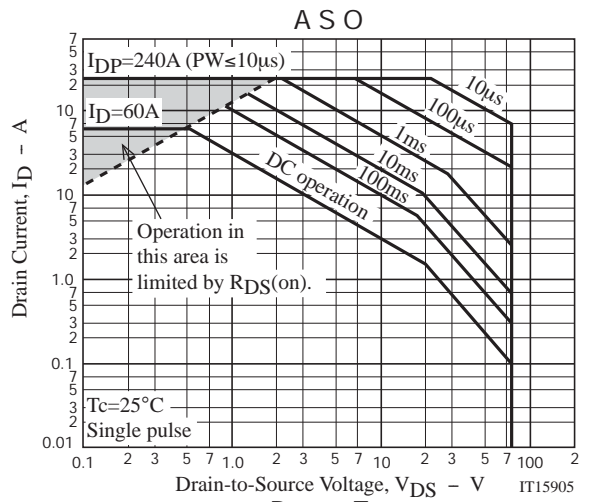
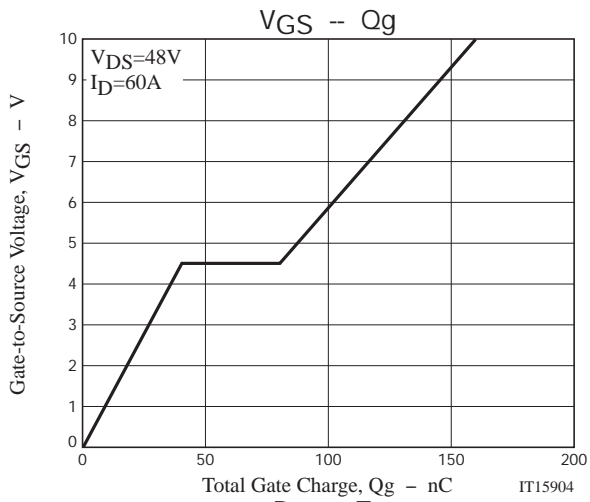


Fig.3 Reverse Recovery Time Test Circuit







Note on usage : Since the BMS4007 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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