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BMS4007

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

Features

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

Specifications

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

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

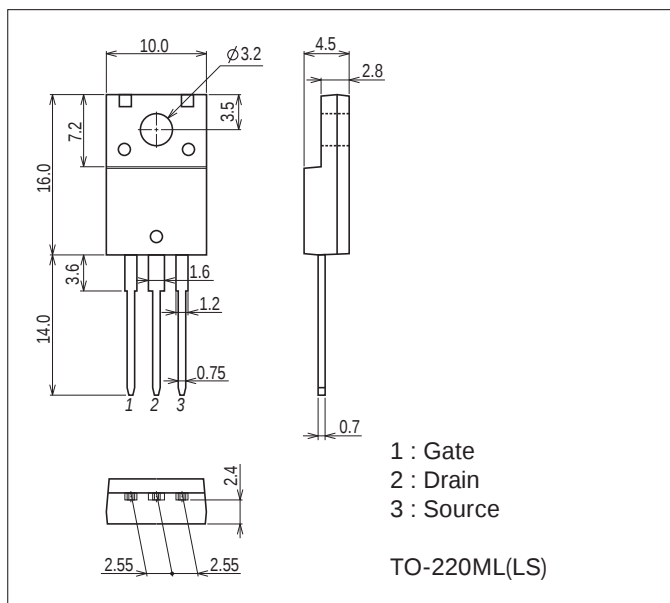
Note : *1 $V_{DD}=48\text{V}$, $L=100\mu\text{H}$, $I_{AV}=48\text{A}$ (Fig.1)*2 $L \leq 100\mu\text{H}$, Single pulse

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)

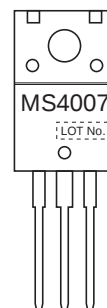
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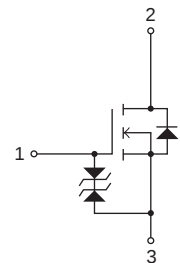
Product & Package Information

- 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	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
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	$t_d(on)$			100		ns
Rise Time	t_r	See Fig.2		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		nC
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}			183		nC

Fig.1 Avalanche Resistance Test Circuit

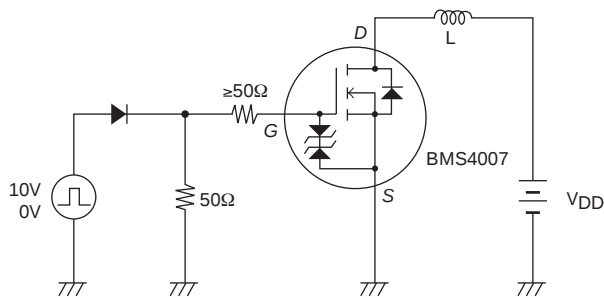


Fig.2 Switching Time Test Circuit

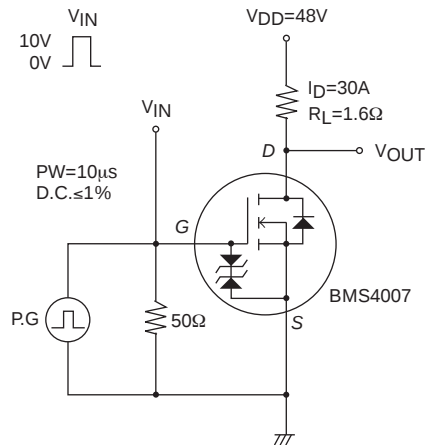
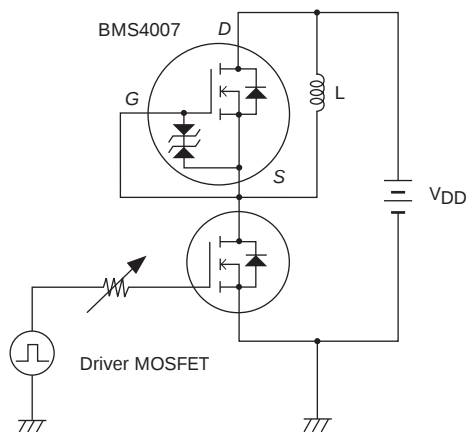
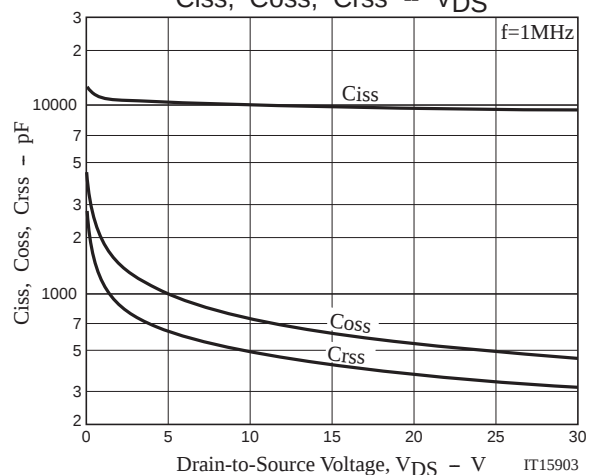
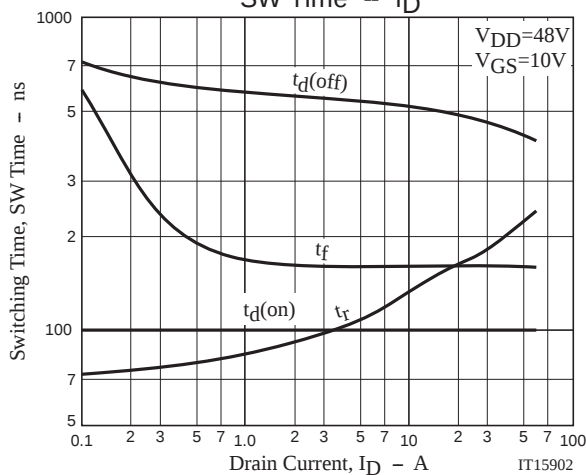
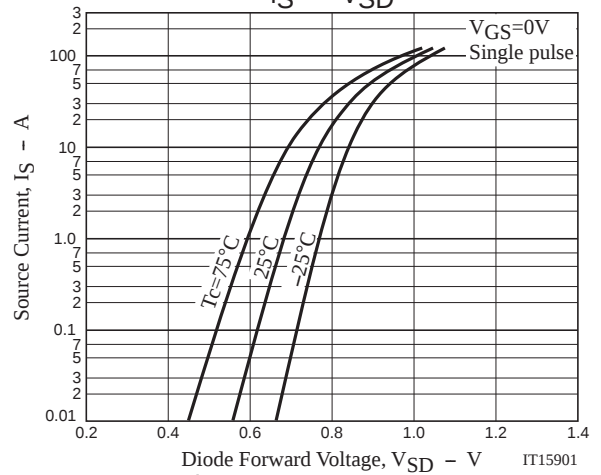
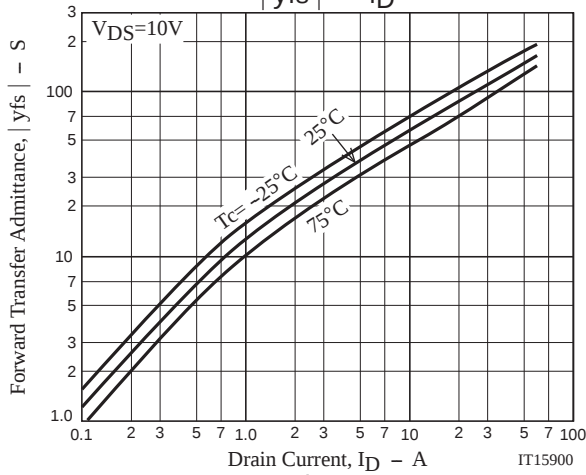
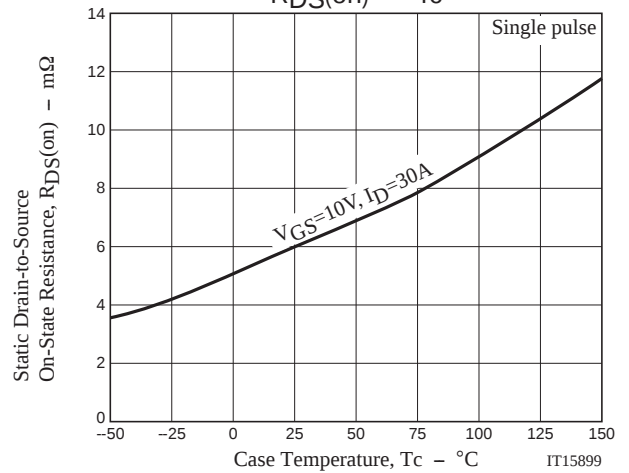
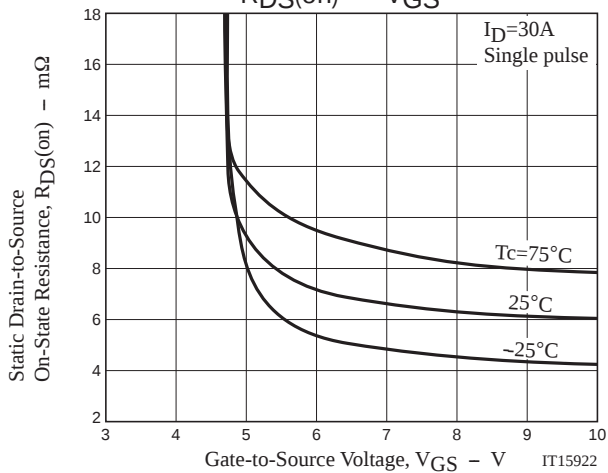
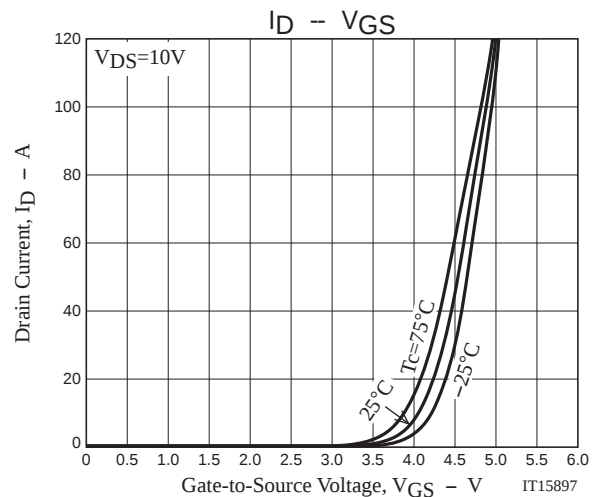
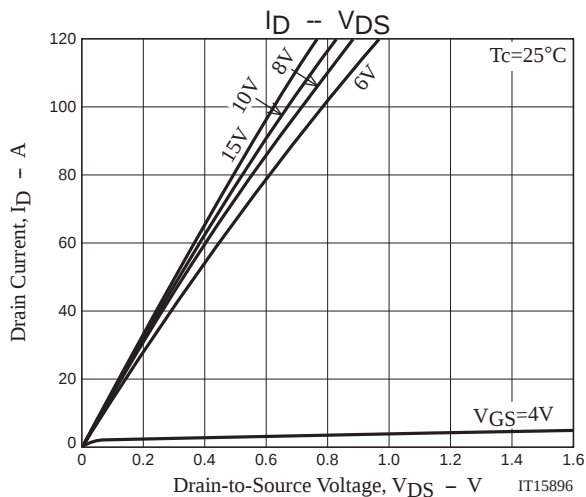
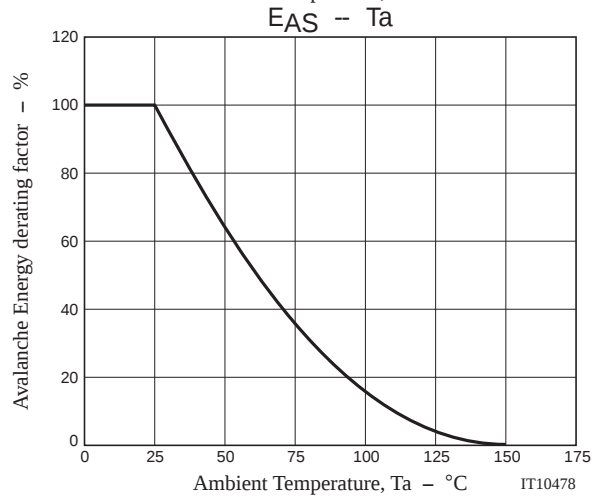
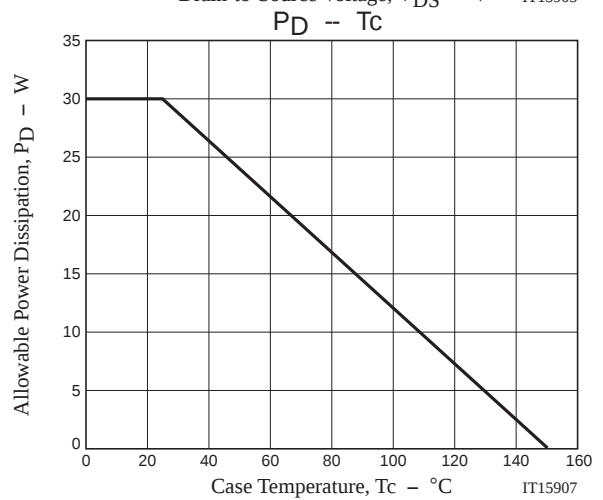
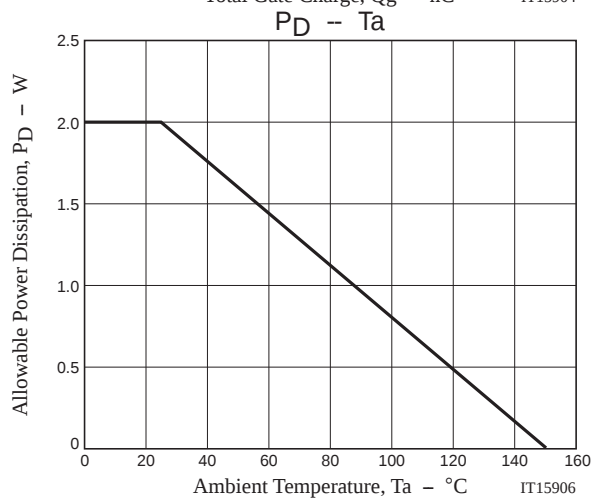
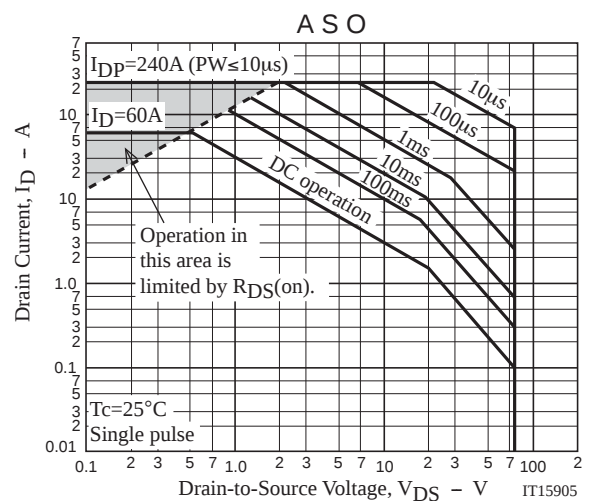
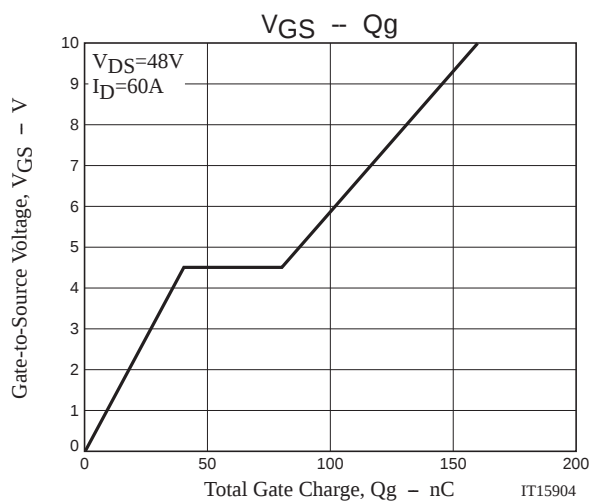


Fig.3 Reverse Recovery Time Test Circuit







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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