

MAXIM

Dual-Power MOSFET Driver

ICL7667/883B

1.0 SCOPE

1.1 This specification covers the detail requirements for a MOSFET driver. This circuit is processed in accordance with MIL-STD-883 and is fully compliant to paragraph 1.2.1.

It is highly recommended that this data sheet be used as a baseline for new military or aerospace source control drawings.

For typical applications and operating characteristics, consult Maxim's data books.

1.2 Part Numbers

Device	Part Number
-1	ICL7667M(X)/883B

1.3 Package

(X) JA	Package J-8	Description 8-Pin Ceramic Dual-In-Line Package (CERDIP)
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Note: See *Package Information* section for package drawing and dimensions.

1.4 Absolute Maximum Ratings

(T_A = +25°C, unless otherwise noted.)

V _{DD} to GND	18V
Input Voltage	(V _{DD} + 0.3V) to (GND - 0.3V)
Power Dissipation (T _j = +150°C)	
up to +70°C (CERDIP)	640mW
derate above +70°C (CERDIP)	8.00mW/°C
Operating Temperature Range	-55°C to +125°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (soldering, 10 sec)	+300°C

1.5 Thermal Resistance $\Theta_{JC} = 55^\circ\text{C/W}$
 $\Theta_{JA} = 125^\circ\text{C/W}$

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2.0 REQUIREMENTS

- 2.1 Electrical performance characteristics are specified in Table 1 and apply over the full ambient operating temperature range, unless otherwise specified.

TABLE 1. ELECTRICAL PERFORMANCE CHARACTERISTICS (Note 1)

CHARACTERISTICS	SYMBOL	CONDITIONS	DEVICE TYPES	GROUP A SUB-GROUPS	LIMITS		UNITS
					MIN	MAX	
Logic 1 Input Voltage	V_{IH}	$V_{DD} = 4.5V$ to $17V$	All	1, 2, 3	2.0		V
Logic 0 Input Voltage	V_{IL}	$V_{DD} = 4.5V$ to $17V$	All	1, 2, 3		0.8	V
Input Current	I_{IN}	$V_{IN} = 0V$ to $15V$	All	1, 2, 3	-1	1	μA
Output Voltage High	V_{OH}	$V_{DD} = 15V$, no load	All	1, 2, 3	14.95		V
Output Voltage Low	V_{OL}	$V_{DD} = 15V$, no load	All	1, 2, 3		0.05	V
Output Resistance	R_{OUT}	$V_{IN} = V_{IL}$, $I_{OUT} = 10mA$	All	1		10	Ω
				2, 3		15	
		$V_{IN} = V_{IH}$, $I_{OUT} = -10mA$		1		12	
				2, 3		20	
Power-Supply Current	I_{DD}	$V_{IN} = 0V$, both inputs	All	1, 2, 3		0.4	mA
		$V_{IN} = 3V$, both inputs		1		7	
				2, 3		8	
Delay Time	t_{D1}	Figure 1	All	9		30	ns
				10, 11		40	
	t_{D2}			9		50	
				10, 11		60	
Rise Time	t_R	Figure 1	All	9		30	ns
				10, 11		40	
Fall Time	t_F	Figure 1	All	9		30	ns
				10, 11		40	

Note 1: $V_{DD} = +15V$, unless otherwise noted.

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3.0 QUALITY ASSURANCE

- 3.1** Sampling and inspection procedures shall be in accordance with MIL-M-38510 and, to the extent specified, with MIL-STD-883.
- 3.2** Screening shall be in accordance with Method 5004 of MIL-STD-883.
Burn-in test (Method 1015):
- (1) Test condition A, B, C, or D.
 - (2) $T_A = +125^{\circ}\text{C}$, minimum.
 - (3) Interim and final electrical test requirements shall be as specified in Table 2.
- 3.3** Quality conformance inspection shall be in accordance with Method 5005 of MIL-STD-883 including groups A, B, C, and D inspection.
Group A inspection:
- (1) Tests as specified in Table 2.
 - (2) Selected subgroups in Table 1, Method 5005 of MIL-STD-883 shall be omitted.
- 3.4** Groups C and D Inspections:
- a. End-point electrical parameters shall be as specified in Table 1.
 - b. Steady-state life test (Method 1005 of MIL-STD-883):
 - (1) Test condition A, B, C, or D.
 - (2) $T_A = +125^{\circ}\text{C}$, minimum.
 - (3) Test duration, 1000 hours, except as permitted by Method 1005 of MIL-STD-883.

TABLE 2. ELECTRICAL TEST REQUIREMENTS

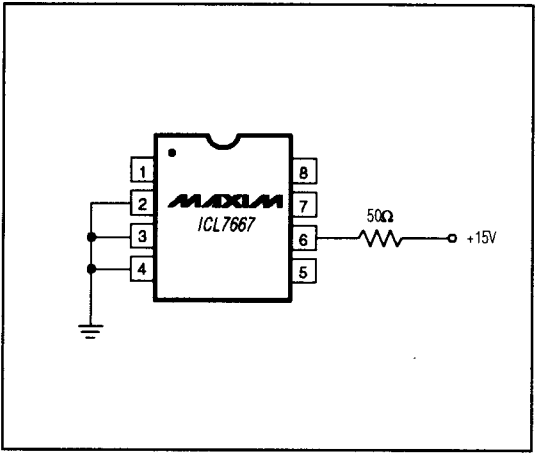
MIL-STD-883 Test Requirements	Subgroups (per Method 5005, Table 2)
Interim Electrical Parameters (Method 5004)	1
Final Electrical Parameters (Method 5004)	1,* 2, 3, 9
Group A Test Requirements (Method 5005)	1, 2, 3, 9, 10,** 11**
Groups C and D End-Point Electrical Parameters (Method 5005)	1

* PDA applies to Subgroup 1 only.

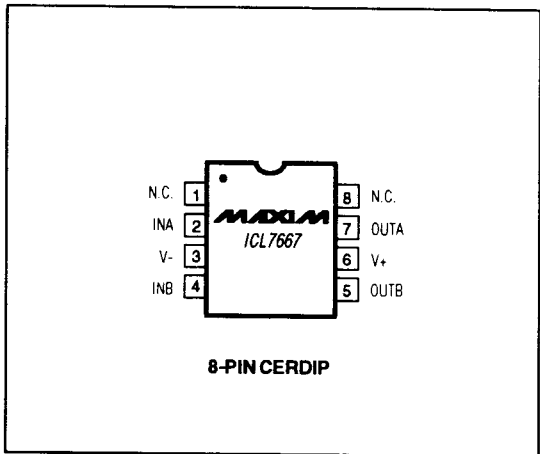
** Subgroups 10 and 11, if not tested, shall be guaranteed to the limits in Table 1.

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4.0 Life Test Burn-In Circuit



4.1 Pin Configuration



4.2 Timing Diagram/Test Circuit

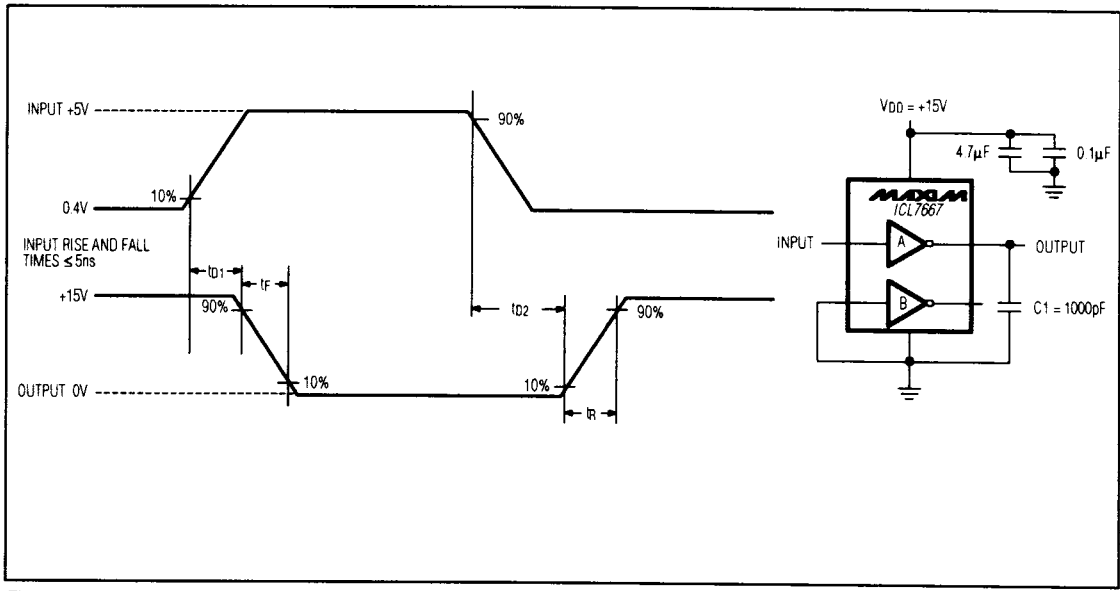


Figure 1.

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