

/ Descriptions

TO-252 Voltage Regulator in a TO-252 Plastic Package.

/ Features

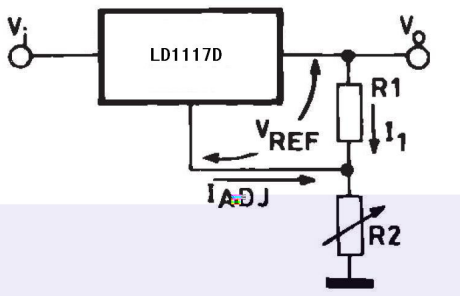
800mA, $V_{REF} = 1.25V$, $I_{ADJ} < 50\mu A$

High efficiency, Low dropout voltage(1V TYP.)output current up to 800mA, internal current and thermal limit, Qualified to AEC-Q100 Standards for High Reliability, HF Product.

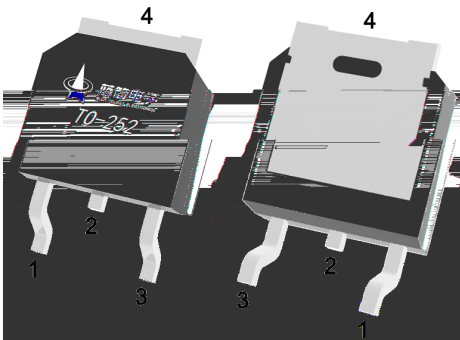
/ Applications

Voltage Regulator, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit or Application Circuit



/ Pinning



PIN1 GND/ADJ PIN 2,4 OUT PIN 3 IN

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Input voltage	V_I	15	V
Thermal Resistance Junction-case	R_{JC}	8	/W
Storage temperature range	T_{stg}	-40 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Type	Test Conditions	Min	Typ	Max	Unit		
Reference Voltage	V_{ref}	BRLD1117DQ- Adj	$V_{in}-V_o=2V$ $T_j=25$ $I_o=10mA$	1.225	1.25	1.275	V		
			10mA I_o 800mA 1.4V ($V_{in}-V_o$) 10V	1.225	1.25	1.275			
Output Voltage	V_o	BRLD1117DQ-1.2	$V_{in}=3.2V$ $T_j=25$ $I_o=10mA$	1.176	1.2	1.224	V		
			10mA I_o 800mA, 3V V_{in} 8V	1.176	1.2	1.224			
		BRLD1117DQ-1.8	$V_{in}=3.8V$ $T_j=25$ $I_o=10mA$	1.764	1.8	1.836	V		
			0 I_o 800mA, 3.3V V_{in} 8V	1.764	1.8	1.836			
		BRLD1117DQ-2.5	$V_{in}=4.5V$ $T_j=25$ $I_o=10mA$	2.45	2.5	2.55	V		
			0 I_o 800mA, 3.9V V_{in} 10V	2.45	2.5	2.55			
		BRLD1117DQ-3.3	$V_{in}=5.3V$ $T_j=25$ $I_o=10mA$	3.234	3.3	3.366	V		
			0 I_o 800mA, 4.75V V_{in} 10V	3.234	3.3	3.366			
		BRLD1117DQ-5.0	$V_{in}=7V$ $T_j=25$ $I_o=10mA$	4.9	5	5.1	V		
			0 I_o 800mA, 6.5V V_{in} 15V	4.9	5	5.1			
		Load Regulation	V_o	BRLD1117DQ-Adj	$V_{in}-V_o=3V$ 10mA I_o 800mA			30	mV
				BRLD1117DQ-1.2	$V_{in}=3V$ 10mA I_o 800mA			30	mV
BRLD1117DQ-1.8	$V_{in}=3.3V$ 0mA I_o 800mA					30	mV		
BRLD1117DQ-2.5	$V_{in}=3.9V$ 0mA I_o 800mA					30	mV		
BRLD1117DQ-3.3	$V_{in}=4.75V$ 0mA I_o 800mA					30	mV		
BRLD1117DQ-5.0	$V_{in}=6.5V$ 0mA I_o 800mA					30	mV		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Type	Test Conditions	Min	Typ	Max	Unit		
Line Regulation	Vo	BRLD1117DQ-Adj	Io=10mA 1.5V (Vin-Vo) 13.75V			23	mV		
		BRLD1117DQ-1.2	3V Vin 8.0V Io=0mA			18	mV		
		BRLD1117DQ-1.8	3.3V Vin 8.0V Io=0mA			31	mV		
		BRLD1117DQ-2.5	3.9V Vin 10V Io=0mA			40	mV		
		BRLD1117DQ-3.3	4.75V Vin 15V Io=0mA			48	mV		
		BRLD1117DQ-5.0	6.5V Vin 15V Io=0mA			55	mV		
Operating Input Voltage	Vin	BRLD1117DQ-Adj	Io=100mA			15	V		
		BRLD1117DQ-1.2				10			
		BRLD1117DQ-1.8				10			
		BRLD1117DQ-2.5				15			
		BRLD1117DQ-3.3				15			
		BRLD1117DQ-5.0				15			
Adjustment Pin Current	Iadj	BRLD1117DQ-Adj	Vin 15V		60	120	uA		
Adjustment Pin Current Change	Iadj		1.4V Vin-Vo 10V, 0mA Io 800mA		1	5			
Quiescent Current	Id	BRLD1117DQ-1.2	Vin 8V		5	10	mA		
		BRLD1117DQ-1.8	Vin 8V						
		BRLD1117DQ-2.5	Vin 10V						
		BRLD1117DQ-3.3	Vin 15V						
		BRLD1117DQ-5.0							
Output Current	Io	BRLD1117DQ-Adj	Vin-Vo=5V Tj=25	600	800	1000	mA		
		BRLD1117DQ-1.2							
		BRLD1117DQ-1.8							
		BRLD1117DQ-2.5							
		BRLD1117DQ-3.3							
		BRLD1117DQ-5.0							
Output Noise	eN	BRLD1117DQ-Adj	10Hz B 10KHz Tj=25		0.003		%		
		BRLD1117DQ-1.2							
		BRLD1117DQ-1.8						100	uV
		BRLD1117DQ-2.5							
		BRLD1117DQ-3.3							
		BRLD1117DQ-5.0							

BRLD1117DQ

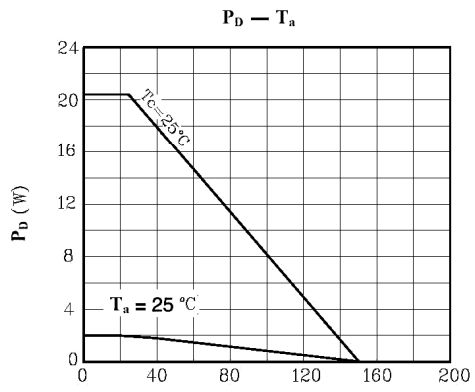
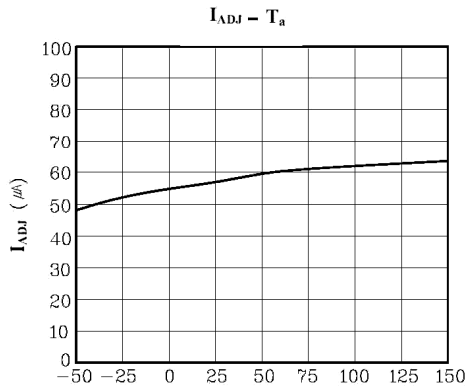
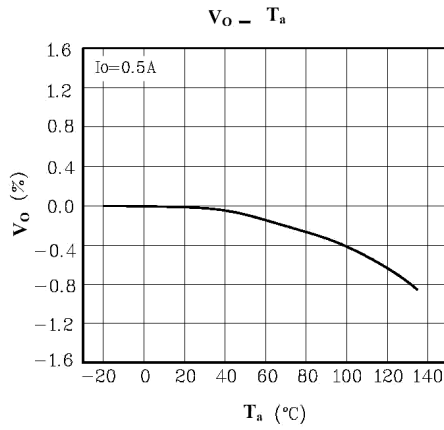
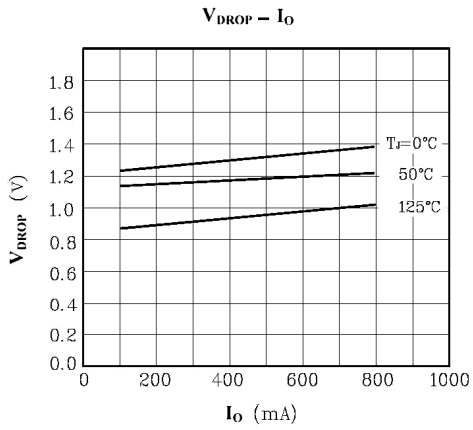
Rev.A Jan.-2024



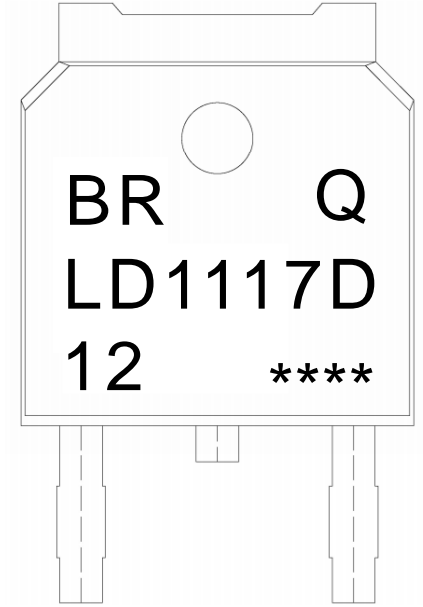
DATA SHEET

Parameter	Symbol	Type	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Rejection	SVR	BRLD1117DQ-Adj	$I_o=40\text{mA}$ $f=120\text{Hz}$, $T_j=25$ $V_{in}-V_o=3\text{V}$, $V_{ripple}=1\text{Vpp}$	60	75		dB
		BRLD1117DQ-1.2					
		BRLD1117DQ-1.8					

/ Electrical Characteristic Curve



/ Marking Instructions



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Note:

BR: Company Code

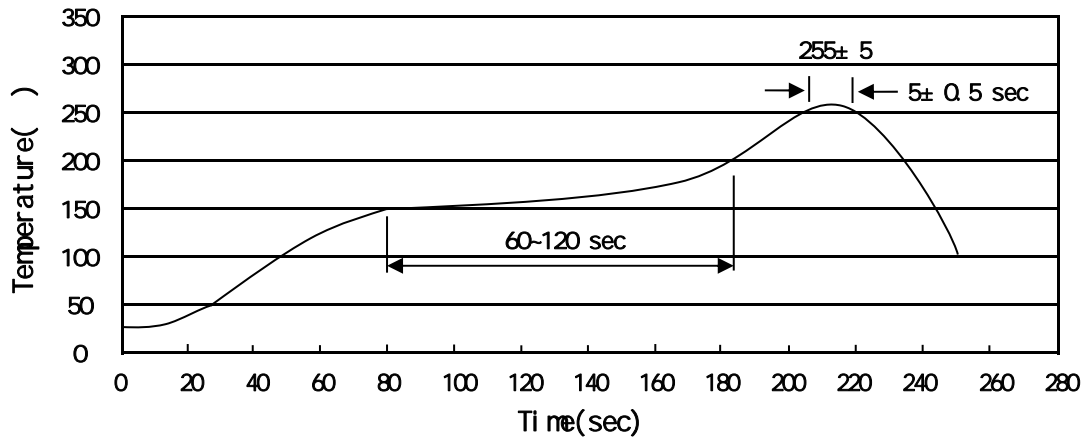
Q: Automobile halogen-free product Code

LD1117D: Product Type Code

12: On Behalf 1.2V

****: Lot No. Code, code change with Lot No

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Note:

- 1 150 200 60 120sec; 1.Preheating:150~200 , Time:60~120sec.
- 2 255±5 5±0.5sec; 2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3 2 10 /sec. 3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只卷盘	卷盘盒	只盒	盒箱	只箱	盒		箱
TO-252	2,500	2	5,000	6	30,000	13	×16	360×360×50 380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只套管	套管盒	只盒	盒箱	只箱	套管	盒	箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices