BS107KL vs. BS107

Description: **N-Channel, 200 V (D-S) MOSFET**
Package: **TO-92-18RM**
Pin Out: **Identical**

Part Number Replacements:

BS107KL-TA Replaces BS107-TA
BS107KL-TR1 Replaces BS107-TR1

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted					
Parameter		**Symbol**	**BS107KL**	**BS107**	**Unit**
Drain-Source Voltage		V_{DS}	240	200	V
Gate-Source Voltage		V_{GS}	± 20	± 25	
Continuous Drain Current	T_A = 25 °C	I_D	0.3	0.12	A
	T_A = 70 °C		0.27	NS[a]	
Pulsed Drain Current		I_{DM}	1.4	NS[a]	
Power Dissipation	T_A = 25 °C	P_D	0.8	0.5	W
	T_A = 70 °C		0.51	NS[a]	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	156	250	°C/W

SPECIFICATIONS T_J = 25 °C, unless otherwise noted									
Parameter		**Symbol**	**BS107KL**			**BS107**			**Unit**
			Min	**Typ**	**Max**	**Min**	**Typ**	**Max**	
Static									
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	240	257		200	220		V
Gate-Threshold Voltage		$V_{G(th)}$	0.8	1.65	2.0	0.8	1.2	3.0	
Gate-Body Leakage		I_{GSS}			± 100			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			1			0.03	µA
On-State Drain Current	V_{GS} = 4.5 V	$I_{D(on)}$	0.8			NS[a]			A
	V_{GS} = 2.5 V		0.5			NS[a]			
Drain-Source On-Resistance	V_{GS} = 4.5 V	$r_{Ds(on)}$		2.3	4		6	NS[a]	Ω
	V_{GS} = 2.5 V			2.4	6		6	28	
Forward Transconductance		g_{fs}		160			180		mS
Diode Forward Voltage		V_{SD}		0.8	1.2			NS[a]	V
Dynamic									
Total Gate Charge		Q_g		4.87	8		1[b]		nC
Gate-Source Charge		Q_{gs}		0.56			0.25[b]		
Gate-Drain Charge		Q_{gd}		1.53			0.5[b]		
Switching									
Turn-On Time[c]		$t_{(on)}$		17	30		5		ns
Turn-Off Time[c]		$t_{(off)}$		51	85		21		

Notes:
a. NS denotes parameter not specified in the original data sheet.
b. Q_g, Q_{gs} and Q_{gd} for BS107 are not specified, values above taken from characteristic curves.
c. Turn-On and Turn-Off time for BS107KL specified as $t_{d(on)} + t_r$ and $t_{d(off)} + t_f$.

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.