



TN0200K vs. TN0200T

Description: N-Channel MOSFET

Package: SOT-23

Pin Out: Identical

Part Number Replacements:

TN0200K-T1 Replaces TN0200T-T1

TN0200K-T1-E3 (Lead (Pb)-free version) Replaces TN0200T-T1

ABSOLUTE MAXIMUM RATINGS $T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted				
Parameter	Symbol	TN0200K	TN0200T	Unit
Drain-Source Voltage	V_{DS}	20	20	V
Gate-Source Voltage	V_{GS}	± 8	± 8	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	0.73	A
	See Note		0.58	
Pulsed Drain Current	I_{DM}	4	4	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	0.35	W
	$T_A = 70\text{ }^\circ\text{C}$		0.22	
Operating Junction and Storage Temperature Range	T_j and T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient	R_{thJA}	357	357	$^\circ\text{C/W}$

SPECIFICATIONS $T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted								
Parameter	Symbol	TN0200K			TN0200T			Unit
		Min	Typ	Max	Min	Typ	Max	
Static								
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	20			20			V
Gate-Threshold Voltage	$V_{GS(th)}$	0.45	0.6	1.0	0.5	0.9	1.5	
Gate-Body Leakage	I_{GSS}			± 5000			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}			1			1	μA
On-State Drain Current	$V_{GS} = 4.5\text{ V}$	$I_{D(on)}$	2.5		2.5			A
	$V_{GS} = 2.5\text{ V}$		1.5		1.5			
Drain-Source On-Resistance	$V_{GS} = 4.5\text{ V}$	$r_{DS(on)}$		0.2	0.4	0.29	0.4	Ω
	$V_{GS} = 2.5\text{ V}$			0.25	0.5	0.34	0.5	
Forward Transconductance	g_{fs}		2.2			2.2		S
Diode Forward Voltage	V_{SD}		0.8	1.2		0.8	1.2	V
Dynamic								
Total Gate Charge	Q_g		1400	2000		1900	2800	pC
Gate-Source Charge	Q_{gs}		190			50		nC
Gate-Drain Charge	Q_{gd}		300			750		
Switching								
Turn-On Time	$t_{d(on)}$		17	25		8	13	ns
	t_r		20	30		14	21	
Turn-Off Time	$t_{d(off)}$		55	85		21	30	
	t_f		30	45		7	11	

NS denotes parameter not specified.

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.