TP0202K vs. TP0202T

Description: **P-Channel MOSFET**
Package: **SOT-23**
Pin Out: **Identical**

Part Number Replacements:
TP0202K Replaces TP0202T
TP0202K-T1-E3 (Lead (Pb)-free Version) Replaces TP0202T-T1-E3 (Lead (Pb)-free Version)

ABSOLUTE MAXIMUM RATINGS T_A = 25 °C, unless otherwise noted

Parameter		Symbol	TP0202K	TP0202T	Unit
Drain-Source Voltage		V_{DS}	- 30	- 20	V
Gate-Source Voltage		V_{GS}	± 20	± 30	
Continuous Drain Current	T_A = 25 °C	I_D	- 0.385	- 0.41	A
	See Note		- 0.280	- 0.26	
Pulsed Drain Current		I_{DM}	- 0.75	- 0.75	
Power Dissipation	T_A = 25 °C	P_D	0.35	0.35	W
	See Note		0.185	0.22	
Operating Junction and Storage Temperature Range		T_j and T_{stg}	- 55 to 150	- 55 to 150	°C
Maximum Junction-to-Ambient		R_{thJA}	350	357	°C/W

Notes: I_D for TP0202T is specified at 70 °C and 85 °C for the TP0202K.

SPECIFICATIONS T_J = 25 °C, unless otherwise noted

Parameter		Symbol	TP0202K			TP0202T			Unit
			Min	Typ	Max	Min	Typ	Max	
Static									
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	- 30	- 38		- 20	- 25		V
Gate-Threshold Voltage		$V_{GS(th)}$	- 1.3	- 2.0	- 3.0	- 1.3	- 2.1	- 3.0	
Gate-Body Leakage		I_{GSS}			± 5000			± 100	nA
Zero Gate Voltage Drain Current		I_{DSS}			10			- 1	µA
On-State Drain Current	V_{GS} = - 10 V	$I_{D(on)}$	- 0.5			- 0.5	- 0.75		A
Drain-Source On-Resistance	V_{GS} = - 10 V	$r_{DS(on)}$		1.25	1.4		0.9	1.4	Ω
	V_{GS} = - 4.5 V			2.1	3.5		1.7	3.5	
Forward Transconductance		g_{fs}		315		250	600		mS
Diode Forward Voltage		V_{SD}			- 1.2		- 0.9	- 1.5	V
Dynamic									
Total Gate Charge		Q_g		1000			2700		pC
Gate-Source Charge		Q_{gs}		225			500		
Gate-Drain Charge		Q_{gd}		175			600		
Switching									
Turn-On Delay Time		$t_{d(on)}$		9			8	12	ns
Rise Time		t_r		6			20	30	
Turn-Off Delay Time		$t_{d(off)}$		30			20	35	
Fall Time		t_f		20			30	40	

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.