

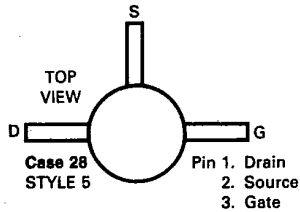
6367255 MOTOROLA SC (DIODES/OPTO)

34C 38225 D

MICRO-T (continued)

T-31-17

# MMT3823 — N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR



- depletion mode (Type A) Field-Effect Transistor designed for RF amplifier and mixer applications where high density packaging is required.

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	Vdc
Drain-Gate Voltage	$V_{DG}$	30	Vdc
Gate-Source Voltage	$V_{GS}$	-30	Vdc
Gate Current	$I_G$	10	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	250 2.0	mW mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	0.50	$^\circ\text{C}/\text{mW}$

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Test Conditions	Min	Typ	Max	Unit
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### OFF CHARACTERISTICS

$V_{(BR)GSS}$	$I_G = -1.0 \mu\text{Adc}, V_{DS} = 0$	-30	—	—	Vdc
$I_{GSS}$	$V_{GS} = -20 \text{Vdc}, V_{DS} = 0$	—	—	-1.0	nAdc
$V_{GS(off)}$	$I_D = 1.0 \text{nAdc}, V_{DS} = 15 \text{Vdc}$	—	—	-8.0	Vdc
$V_{GS}$	$I_D = 0.5 \text{mAdc}, V_{DS} = 15 \text{Vdc}$	-1.0	—	-8.0	Vdc

### ON CHARACTERISTICS

$I_{DSS}$	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0$	5.0	—	20	mAdc
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### DYNAMIC CHARACTERISTICS

$ y_{fs} $	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 1.0 \text{kHz}$ $V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 200 \text{MHz}$	3000 —	— 4000	8000 —	$\mu\text{mhos}$
$\text{Re}(y_{fs})$	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 200 \text{MHz}$	—	500	—	$\mu\text{mhos}$
$ y_{os} $	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 1.0 \text{kHz}$	—	25	—	$\mu\text{mhos}$
$\text{Re}(y_{os})$	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 200 \text{MHz}$	—	125	—	$\mu\text{mhos}$
$C_{iss}$	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 1.0 \text{MHz}$	—	4.0	6.0	pF
$C_{rss}$	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, f = 1.0 \text{MHz}$	—	1.0	2.0	pF
NF	$V_{DS} = 15 \text{Vdc}, V_{GS} = 0, R_S = 1000 \text{ohms},$ $f = 100 \text{MHz}$	—	2.0	—	dB

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