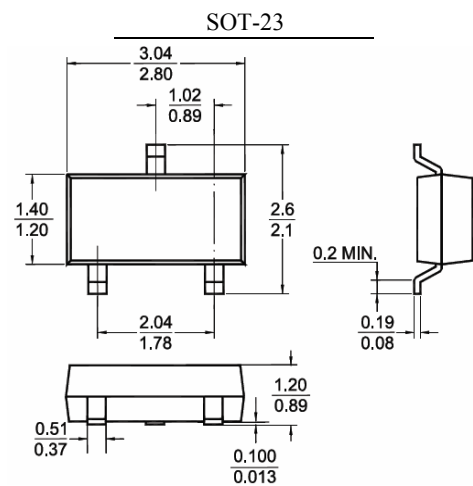
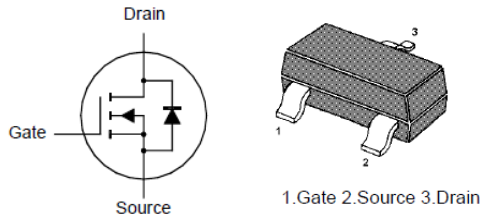


N-Channel Enhancement Mode Field Effect Transistor

FEATURES

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switching
- High saturation current capability
- High speed switching
- Suffix "H" indicates Halogen-free parts, ex. MMBT7002H



Dimensions in millimeter

Maximum Ratings ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage ($R_{GS} \leq 1M\Omega$)	V_{DGR}	60	V
Gate-Source Voltage	V_{GSS}	-Continuous	± 20
		-Non Repetitive ($t_p < 50\ \mu s$)	± 40
Maximum Drain Current	I_D	-Continuous	115
		-Pulsed	800
Total Power Dissipation	P_{tot}	200	mW
Operating and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

Electrical Characteristics ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Max.	Unit
Drain Source Breakdown Voltag	$I_D = 10\ \mu A$	BV_{DSS}	60	-	V
Zero Gate Voltage Drain Current	$V_{DS} = 60\text{ V}$	I_{DSS}	-	1	μA
Gate-Body Leakage Current	$V_{GS} = \pm 20\text{ V}$	$\pm I_{GSS}$	-	100	nA
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\ \mu A$	$V_{GS(th)}$	1	2.5	V
On-State Drain Current	$V_{GS} = 10\text{ V}, V_{DS} = 7.5\text{ V}$	$I_{D(ON)}$	500	-	mA
Drain-Source On-Voltage	$V_{GS} = 10\text{ V}, I_D = 500\text{ mA}$	$V_{DS(ON)}$	-	3.75	V
	$V_{GS} = 5\text{ V}, I_D = 50\text{ mA}$		-	1.5	
Static Drain-Source On-Resistance	$V_{GS} = 10\text{ V}, I_D = 500\text{ mA}$	$R_{DS(ON)}$	-	7.5	Ω
Forward Transconductance	$V_{DS} = 10\text{ V}, I_D = 200\text{ mA}$	g_{FS}	80	-	mS
Input Capacitance	$V_{DS} = 25\text{ V}, f = 1\text{ MHz}$	C_{iss}	-	50	pF
Output Capacitance	$V_{DS} = 25\text{ V}, f = 1\text{ MHz}$	C_{oss}	-	25	pF
Reverse Transfer Capacitance	$V_{DS} = 25\text{ V}, f = 1\text{ MHz}$	C_{rss}	-	5	pF
Turn-On Time	$V_{DD} = 30\text{ V}, R_L = 150\ \Omega,$ $I_D = 0.2\text{ A}, V_{GS} = 10\text{ V},$ $R_{GEN} = 25\ \Omega$	t_{on}	-	20	nS
Turn-Off Time	$V_{DD} = 30\text{ V}, R_L = 150\ \Omega,$ $I_D = 0.2\text{ A}, V_{GS} = 10\text{ V},$ $R_{GEN} = 25\ \Omega$	t_{off}	-	20	nS

RATINGS AND CHARACTERISTIC CURVES

