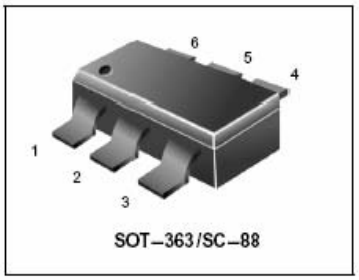
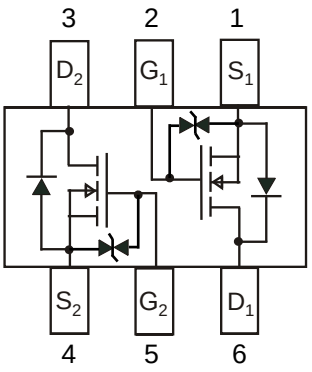
Dual Small Signal MOSFET
115 mAmps, 60 Volts
N-Channel SC-88



- We declare that the material of product are Halogen Free and compliance with RoHS requirements.
- ESD Protected:1000V

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain−Source Voltage	V_{DSS}	60	Vdc
Drain−Gate Voltage (R_{GS} = 1.0 MΩ)	V_{DGR}	60	Vdc
Drain Current − Continuous T_C = 25°C (Note 1) T_C = 100°C (Note 1) − Pulsed (Note 2)	I_D I_D I_{DM}	±115 ±75 ±800	mAdc
Gate−Source Voltage − Continuous − Non−repetitive ($t_p \leq$50 μs)	V_{GS} V_{GSM}	±20 ±40	Vdc Vpk



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation Per Device FR−5 Board (Note 1) T_A = 25°C Derate Above 25°C	P_D	380 250 3.0	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	328	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	−55 to +150	°C

1. FR−5 = 1.0 x 0.75 x 0.062 in

ORDERING INFORMATION

Device	Marking	Shipping
FTK7002D	702	3000 Tape & Reel

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Drain–Source Breakdown Voltage (V_{GS} = 0, I_D = 10 µAdc)	$V_{(BR)DSS}$	60	–	–	Vdc
Zero Gate Voltage Drain Current (V_{GS} = 0, V_{DS} = 60 Vdc) T_J = 25°C T_J = 125°C	I_{DSS}	– –	– –	1.0 500	µAdc
Gate–Body Leakage Current, Forward (V_{GS} = 20 Vdc)	I_{GSSF}	–	–	1	µAdc
Gate–Body Leakage Current, Reverse (V_{GS} = – 20 Vdc)	I_{GSSR}	–	–	-1	µAdc
ON CHARACTERISTICS (Note 2.)					
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 250 µAdc)	$V_{GS(th)}$	1.0	–	2.0	Vdc
On–State Drain Current (V_{DS} ≥2.0 $V_{DS(on)}$, V_{GS} = 10 Vdc)	$I_{D(on)}$	500	–	–	mA
Static Drain–Source On–State Voltage (V_{GS} = 10 Vdc, I_D = 500 mAdc) (V_{GS} = 5.0 Vdc, I_D = 50 mAdc)	$V_{DS(on)}$	 – –	 – –	 3.75 0.375	Vdc
Static Drain–Source On–State Resistance (V_{GS} = 10 V, I_D = 500 mAdc) T_C = 25°C T_C = 125°C (V_{GS} = 5.0 Vdc, I_D = 50 mAdc) T_C = 25°C T_C = 125°C	$r_{DS(on)}$	 – – – –	 – – – –	 7.5 13.5 7.5 13.5	Ohms
Forward Transconductance (V_{DS} ≥2.0 $V_{DS(on)}$, I_D = 200 mAdc)	g_{FS}	80	–	–	mmhos
DYNAMIC CHARACTERISTICS					
Input Capacitance (V_{DS} = 25 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{iss}	–	–	50	pF
Output Capacitance (V_{DS} = 25 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{oss}	–	–	25	pF
Reverse Transfer Capacitance (V_{DS} = 25 Vdc, V_{GS} = 0, f = 1.0 MHz)	C_{rss}	–	–	5.0	pF
SWITCHING CHARACTERISTICS (Note 2.)					
Turn–On Delay Time (V_{DD} = 25 Vdc , I_D ≅ 500 mAdc, R_G = 25 Ω, R_L = 50 Ω, V_{gen} = 10 V)	$t_{d(on)}$	–	–	20	ns
Turn–Off Delay Time	$t_{d(off)}$	–	–	40	ns
BODY–DRAIN DIODE RATINGS					
Diode Forward On–Voltage (I_S = 11.5 mAdc, V_{GS} = 0 V)	V_{SD}	–	–	–1.5	Vdc
Source Current Continuous (Body Diode)	I_S	–	–	–115	mAdc
Source Current Pulsed	I_{SM}	–	–	–800	mAdc

2. Pulse Test: Pulse Width ≤300 µs, Duty Cycle ≤2.0%.

TYPICAL ELECTRICAL CHARACTERISTICS

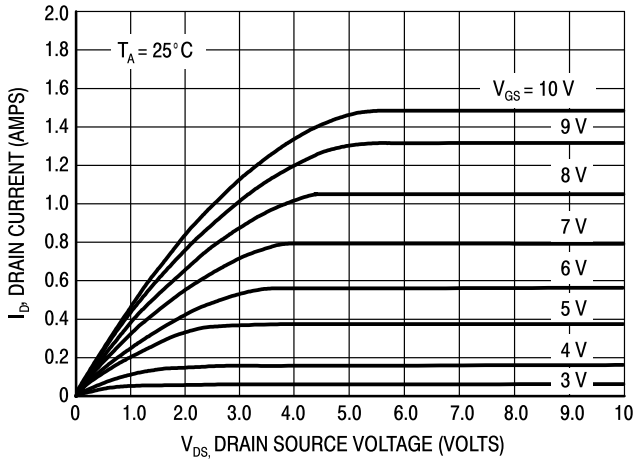


Figure 1. Ohmic Region

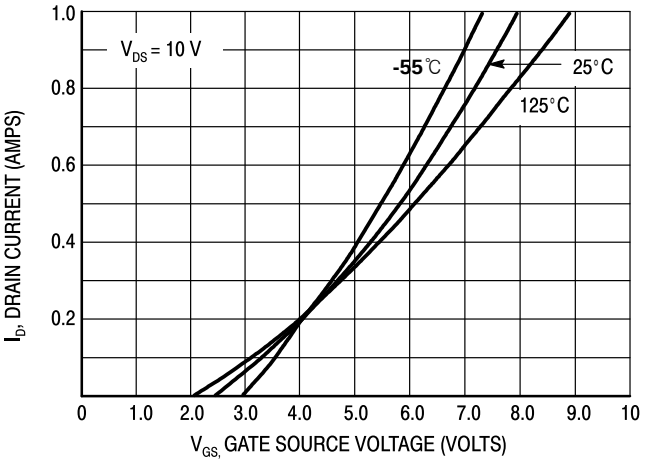


Figure 2. Transfer Characteristics

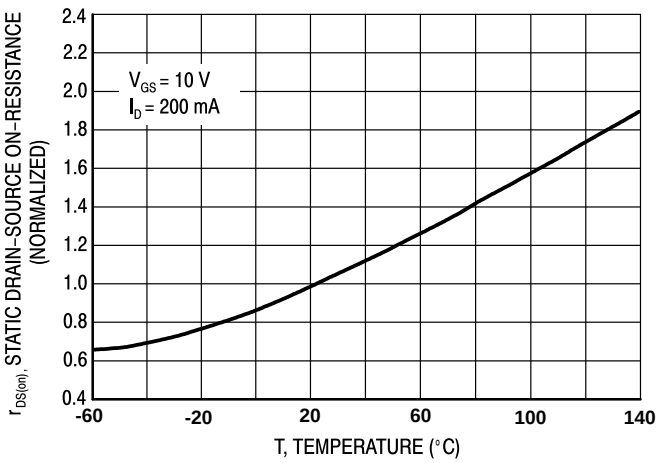


Figure 3. Temperature versus Static Drain–Source On–Resistance

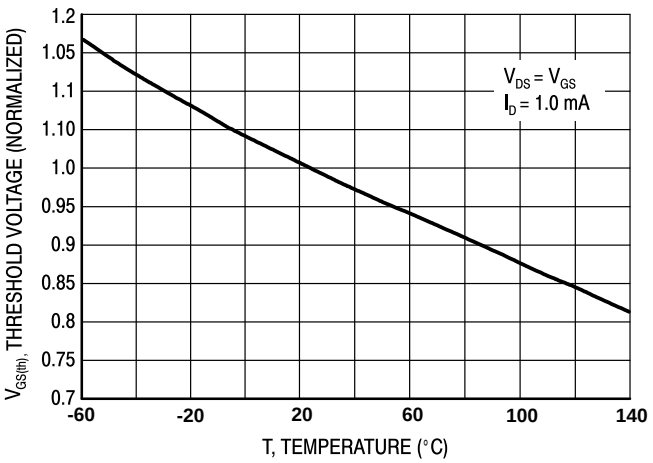
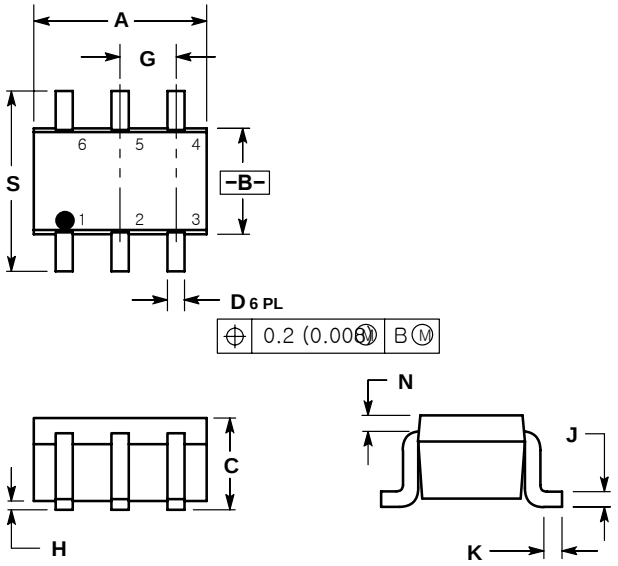


Figure 4. Temperature versus Gate Threshold Voltage

SC−88 (SOT−363)
CASE 419B−02
ISSUE T



NOTES:
1. DIMENSION NG AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 419B−01 OBSOLETE, NEW STANDARD 419B−02.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0 071	0.087	1 80	2.20
B	0 045	0.053	1.15	1.35
C	0 031	0.043	0 80	1.10
D	0 004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H	−−−	0.004	−−−	0.10
J	0 004	0.010	0.10	0.25
K	0 004	0.012	0.10	0.30
N	0.008 REF		0 20 REF	
S	0 079	0.087	2 00	2.20

STYLE 1:
PIN 1. EMITTER 2
2. BASE 2
3. COLLECTOR 1
4. EMITTER 1
5. BASE 1
6. COLLECTOR 2

SOLDERING FOOTPRINT*