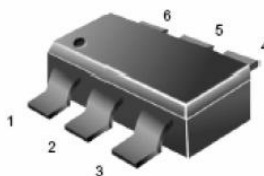
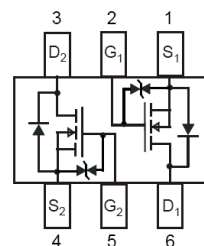


Main Product Characteristics:

V_{DSS}	60V
$R_{DS(on)}$	7.5ohm(max.)
I_D	0.115A


SOT-363

Schematic diagram
Features and Benefits:

- Advanced trench MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150°C operating temperature


Description:

It utilizes the latest trench processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications

Absolute max Rating:

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Drain Current-Continuous@ Current-Pulsed (Note 1)	I _D	0.115	A
	I _{DM}	0.8	A
Maximum Power Dissipation	P _D	0.38	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C

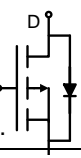
Thermal Resistance

Thermal Resistance, Junction-to-Ambient (Note 2)	R _{θJA}	328	°C/W
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Electrical Characterizes @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=0.5A$			7.5	Ω
		$V_{GS}=5V, I_D=0.05A$			7.5	
Forward Transconductance	g_{FS}	$V_{DS}=10V, I_D=0.2A$	0.08			S
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V,$ $F=1.0\text{MHz}$		30		PF
Output Capacitance	C_{oss}			6		PF
Reverse Transfer Capacitance	C_{rss}			3		PF
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=0.2A,$			20	nS
Turn-Off Delay Time	$t_{d(off)}$	$V_{GS}=10V, R_{GEN}=10\Omega$			40	nS

Source-Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	0.115	A	MOSFET symbol showing the integral reverse p-n junction diode. 
I_{SM}	Pulsed Source Current (Body Diode)	—	—	0.8	A	
V_{SD}	Diode Forward Voltage	—	—	1.3	V	$I_S=0.2A, V_{GS}=0V$

NOTES:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

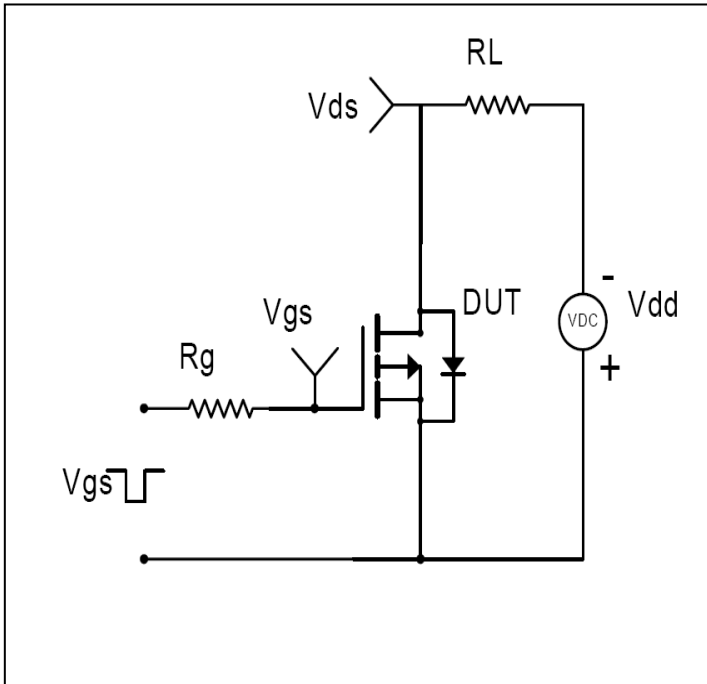


Figure 1: Switching Test Circuit

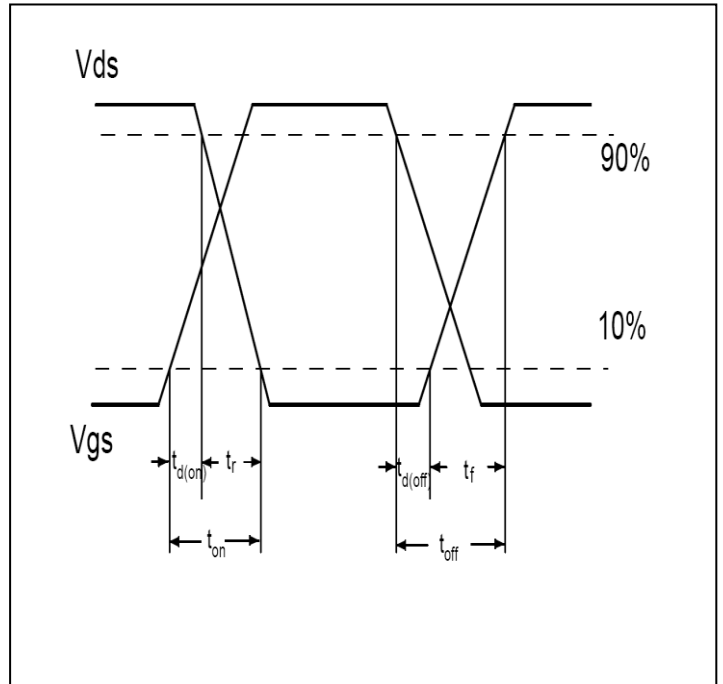


Figure 2: Switching Waveforms

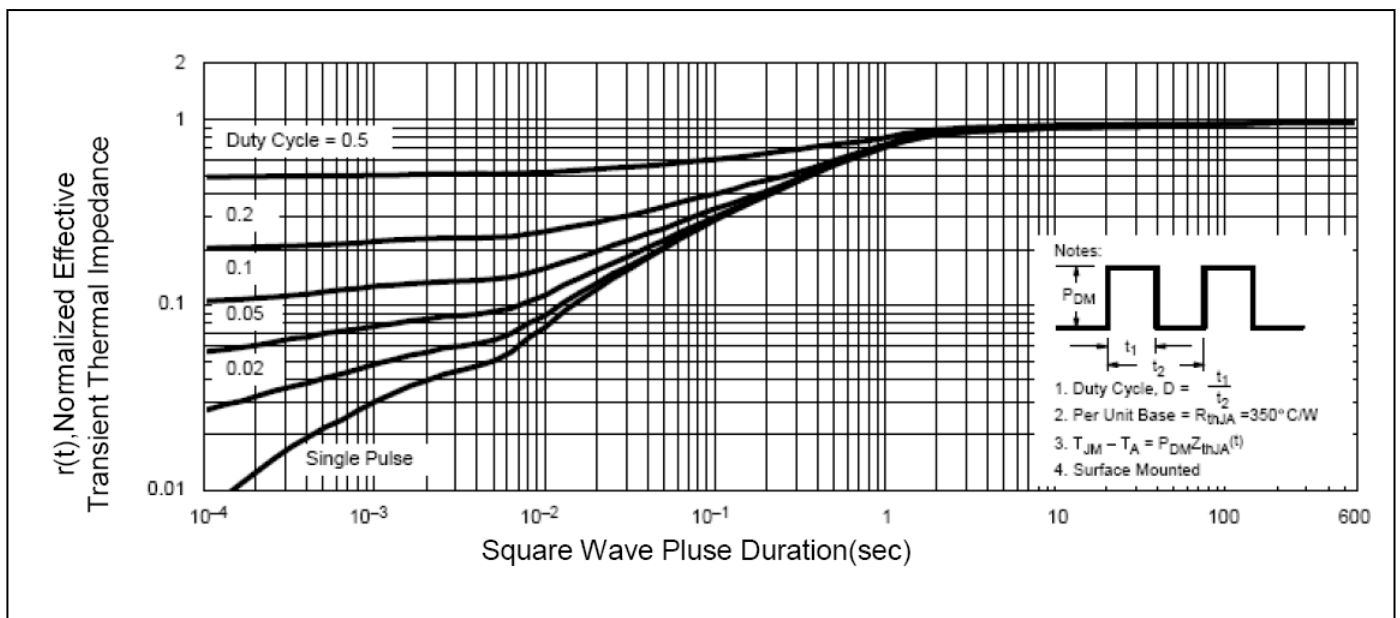
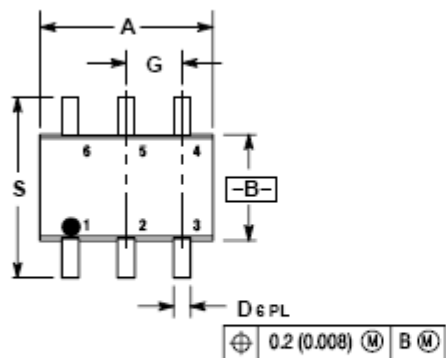
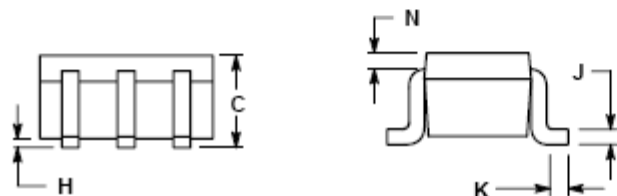


Figure3. Maximum Effective Transient Thermal Impedance, Junction-to-Case

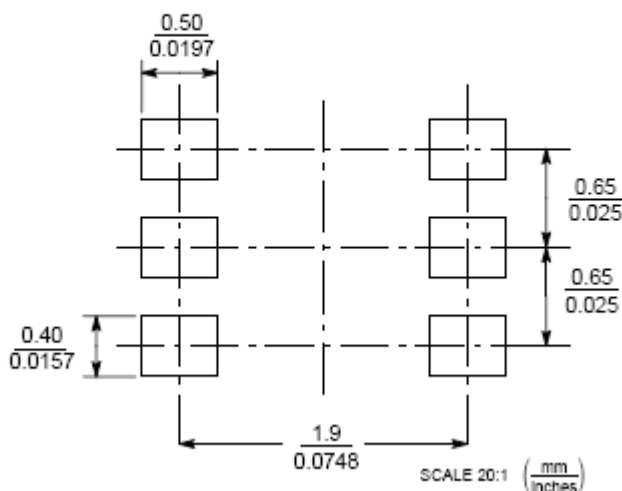
Mechanical Data:
**SC-88 (SOT-363)
CASE 419B-02
ISSUE T**


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

DIM	INCHES		MILLIMETERS	
	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
 - BASE 2
 - COLLECTOR 1
 - EMITTER 1
 - BASE 1
 - COLLECTOR 2

SOLDERING FOOTPRINT*

NOTES:

1. Dimensions are inclusive of plating
2. Package body sizes exclude mold flash and gate burrs. Mold flash at the non-lead sides should be less than 6 mils.
3. Dimension L is measured in gauge plane.
4. Controlling dimension is millimeter; converted inch dimensions are not necessarily exact.

Ordering and Marking Information
Device Marking: 702

Package (Available)
SOT-363
Operating Temperature Range
C : -55 to 150 °C

Devices per Unit

Package Type	Units/Tape	Tapes/Inner Box	Units/Inner Box	Inner Boxes/Carton Box	Units/Carton Box
SOT-363	3000	10	30000	4	120000

Reliability Test Program

Test Item	Conditions	Duration	Sample Size
High Temperature Reverse Bias(HTRB)	$T_j=125^{\circ}\text{C}$ to 150°C @ 80% of Max $V_{DSS}/V_{CES}/VR$	168 hours 500 hours 1000 hours	3 lots x 77 devices
High Temperature Gate Bias(HTGB)	$T_j=150^{\circ}\text{C}$ or 150°C @ 100% of Max V_{GSS}	168 hours 500 hours 1000 hours	3 lots x 77 devices

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