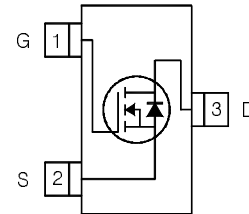
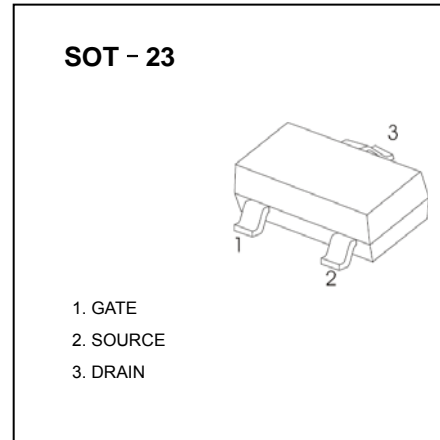


**Features**

- $V_{DS} (V) = 25V$
- $R_{DS(ON)} < 24m\Omega$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 41m\Omega$  ( $V_{GS} = 4.5V$ )

**Benefits**

- Lower switching losses
- Multi-vendor compatibility
- Easier manufacturing
- Environmentally friendly
- Increased reliability



**Absolute Maximum Ratings**

Symbol	Parameter	Max.	Units
$V_{DS}$	Drain-Source Voltage	25	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	5.8	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	4.6	
$I_{DM}$	Pulsed Drain Current	24	
$P_D @ T_A = 25^\circ C$	Maximum Power Dissipation	1.25	W
$P_D @ T_A = 70^\circ C$	Maximum Power Dissipation	0.80	
	Linear Derating Factor	0.01	W/°C
$V_{GS}$	Gate-to-Source Voltage	$\pm 20$	V
$T_J, T_{STG}$	Junction and Storage Temperature Range	-55 to + 150	°C

**Thermal Resistance**


Symbol	Parameter	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient ③	—	100	°C/W
$R_{\theta JA}$	Junction-to-Ambient ( $t < 10s$ ) ④	—	99	

- ① Repetitive rating; pulse width limited by max. junction temperature.
- ② Pulse width  $\leq 400\mu s$ ; duty cycle  $\leq 2\%$ .
- ③ Surface mounted on 1 in square Cu board.

## Electric Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Units	
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	25	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.02	—	V/ $^\circ\text{C}$	Reference to $25^\circ\text{C}, I_D = 1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	20	24	m $\Omega$	$V_{GS} = 10V, I_D = 5.8A$ ②
		—	32	41		$V_{GS} = 4.5V, I_D = 4.6A$ ②
$V_{GS(th)}$	Gate Threshold Voltage	1.35	1.7	2.35	V	$V_{DS} = V_{GS}, I_D = 10\mu A$
$I_{DSS}$	Drain-to-Source Leakage Current	—	—	1.0	$\mu A$	$V_{DS} = 20V, V_{GS} = 0V$
		—	—	150		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125^\circ\text{C}$
$I_{GSS}$	Gate-to-Source Forward Leakage	—	—	100	nA	$V_{GS} = 20V$
	Gate-to-Source Reverse Leakage	—	—	-100		$V_{GS} = -20V$
$R_G$	Internal Gate Resistance	—	1.6	—	$\Omega$	
$g_{fs}$	Forward Transconductance	10	—	—	S	$V_{DS} = 10V, I_D = 5.8A$
$Q_g$	Total Gate Charge	—	5.4	—	nC	$I_D = 5.8A$
$Q_{gs}$	Gate-to-Source Charge	—	1.0	—		$V_{DS} = 13V$
$Q_{gd}$	Gate-to-Drain ("Miller") Charge	—	0.81	—		$V_{GS} = 10V$ ②
$t_{d(on)}$	Turn-On Delay Time	—	2.7	—	ns	$V_{DD} = 13V$ ②
$t_r$	Rise Time	—	2.1	—		$I_D = 1.0A$
$t_{d(off)}$	Turn-Off Delay Time	—	9.0	—		$R_G = 6.8\Omega$
$t_f$	Fall Time	—	2.9	—		$V_{GS} = 10V$
$C_{iss}$	Input Capacitance	—	430	—	pF	$V_{GS} = 0V$
$C_{oss}$	Output Capacitance	—	110	—		$V_{DS} = 10V$
$C_{riss}$	Reverse Transfer Capacitance	—	49	—		$f = 1.0\text{MHz}$

## Source - Drain Ratings and Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	
$I_S$	Continuous Source Current (Body Diode)	—	—	1.25	A	MOSFET symbol showing the integral reverse p-n junction diode. 
$I_{SM}$	Pulsed Source Current (Body Diode) ①	—	—	24		
$V_{SD}$	Diode Forward Voltage	—	—	1.2	V	$T_J = 25^\circ\text{C}, I_S = 5.8A, V_{GS} = 0V$ ②
$t_{rr}$	Reverse Recovery Time	—	11	17	ns	$T_J = 25^\circ\text{C}, V_R = 20V, I_F = 5.8A$
$Q_{rr}$	Reverse Recovery Charge	—	4.2	6.3	nC	$di/dt = 100A/\mu s$ ②

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)

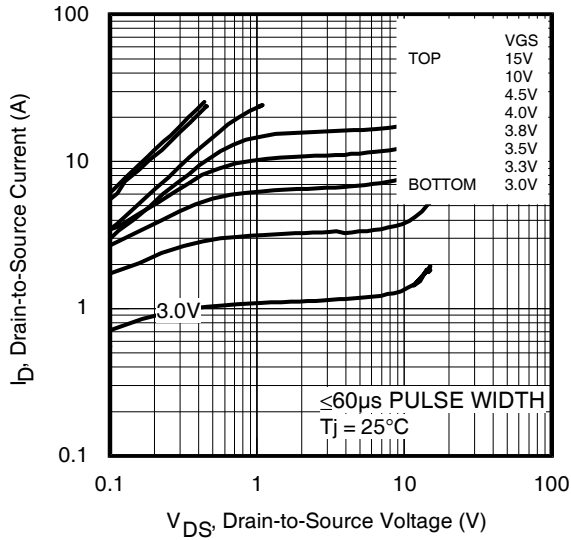


Fig 1. Typical Output Characteristics

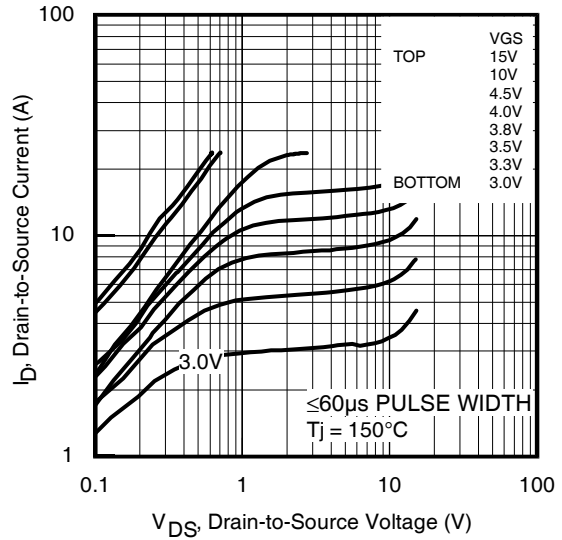


Fig 2. Typical Output Characteristics

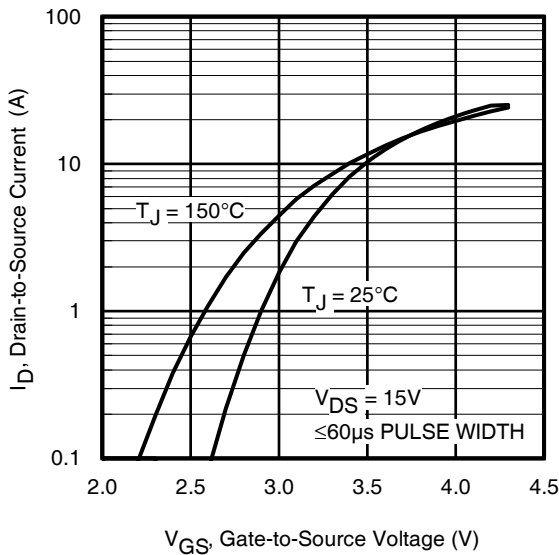


Fig 3. Typical Transfer Characteristics

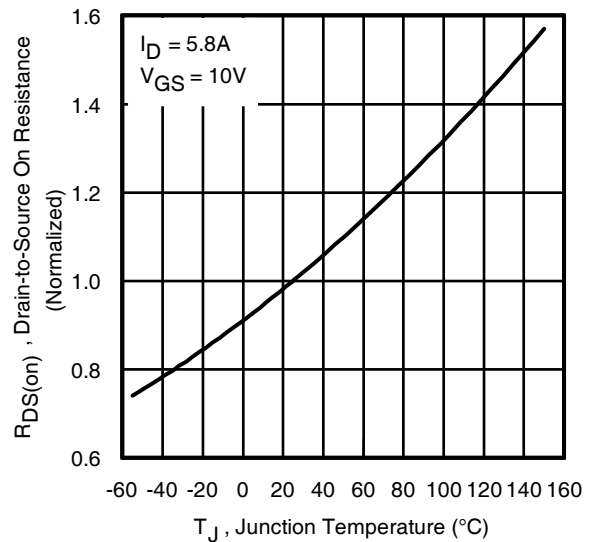
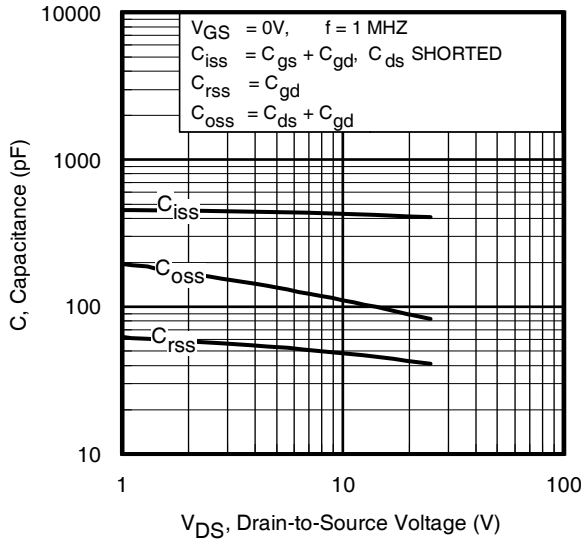
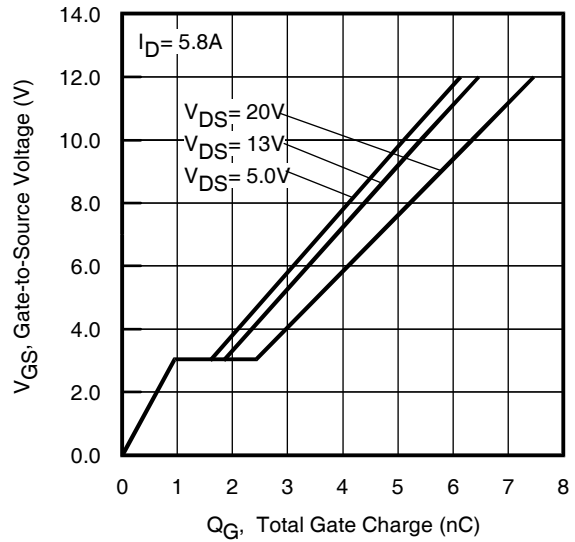


Fig 4. Normalized On-Resistance vs. Temperature

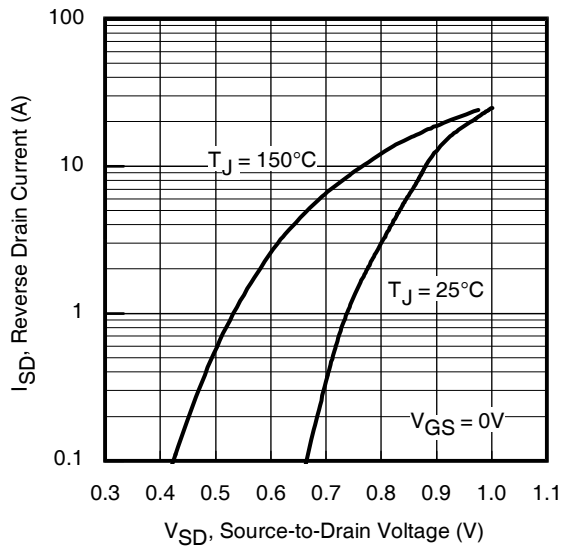
**TYPICAL CHARACTERISTICS** (25 °C, unless otherwise noted)



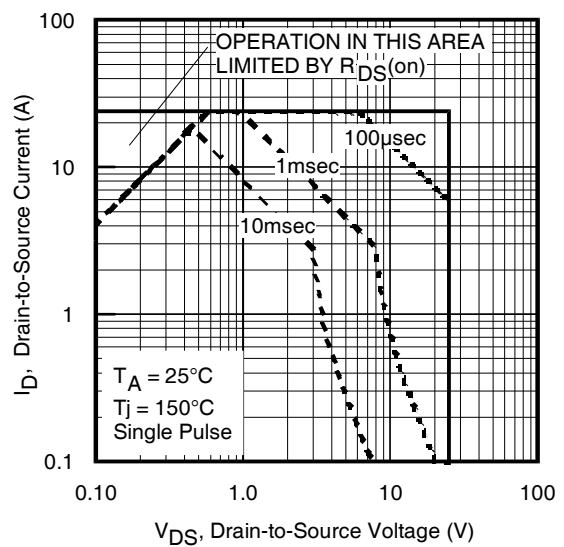
**Fig 5.** Typical Capacitance vs. Drain-to-Source Voltage



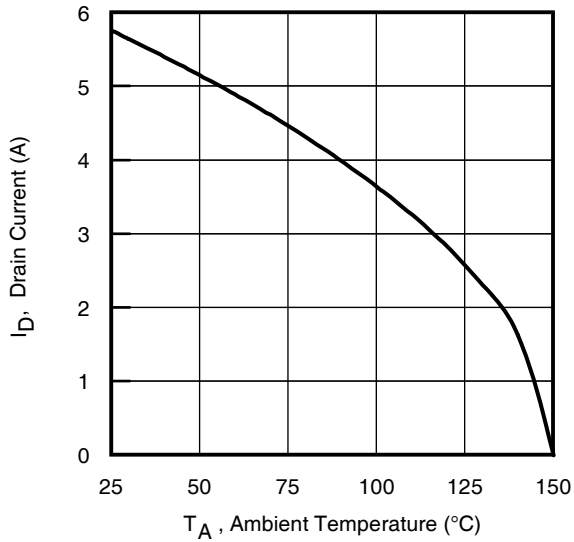
**Fig 6.** Typical Gate Charge vs. Gate-to-Source Voltage



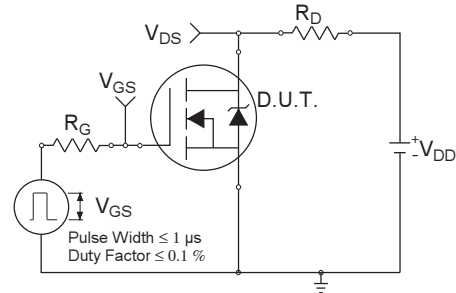
**Fig 7.** Typical Source-Drain Diode Forward Voltage



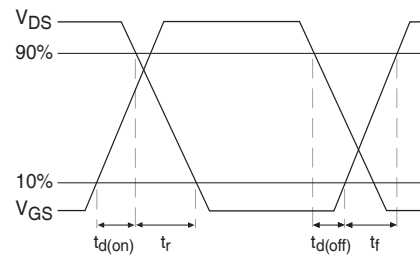
**Fig 8.** Maximum Safe Operating Area



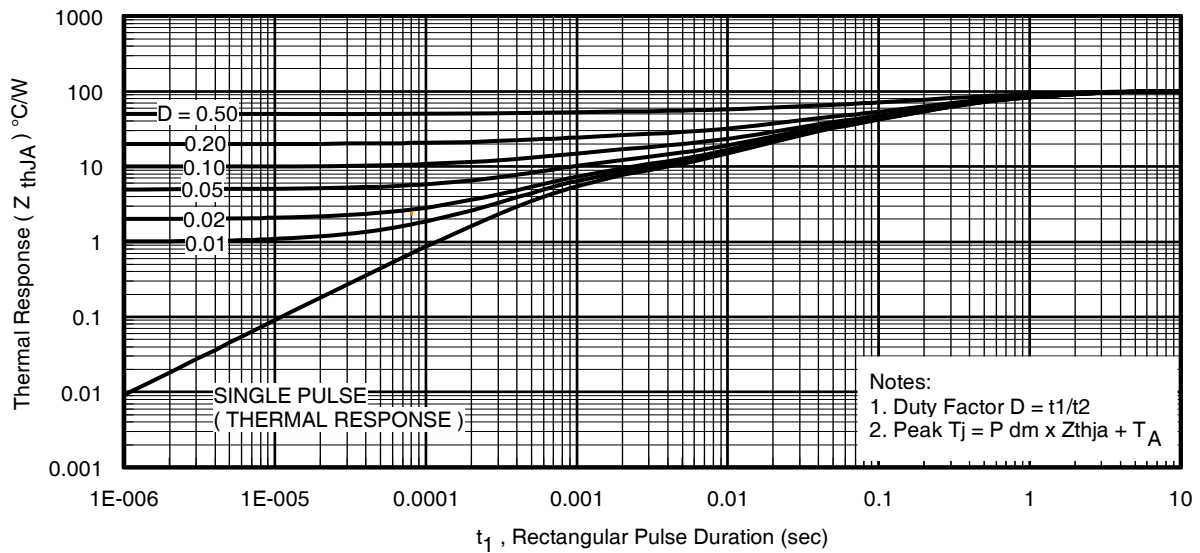
**Fig 9.** Maximum Drain Current vs. Ambient Temperature



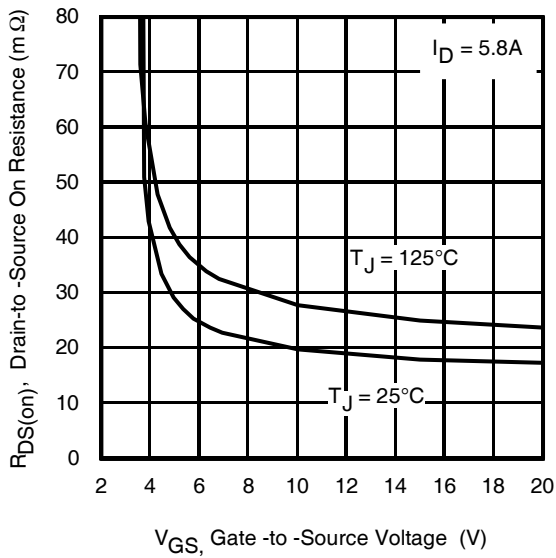
**Fig 10a.** Switching Time Test Circuit



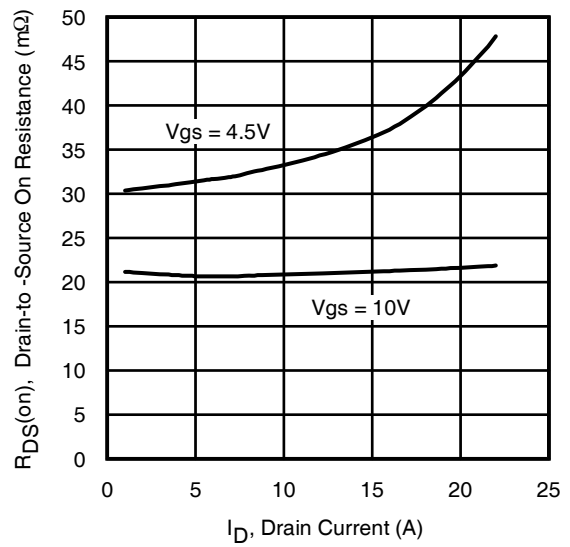
**Fig 10b.** Switching Time Waveforms



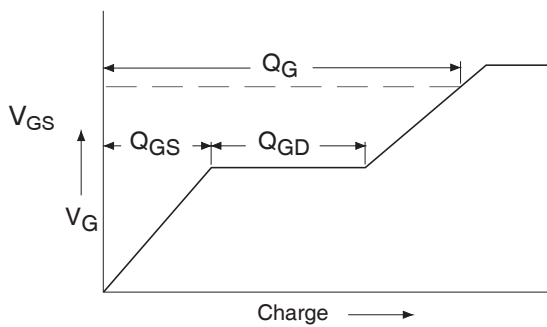
**Fig 11.** Typical Effective Transient Thermal Impedance, Junction-to-Ambient



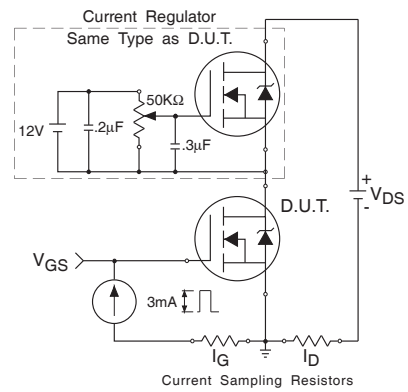
**Fig 12.** Typical On-Resistance vs. Gate Voltage



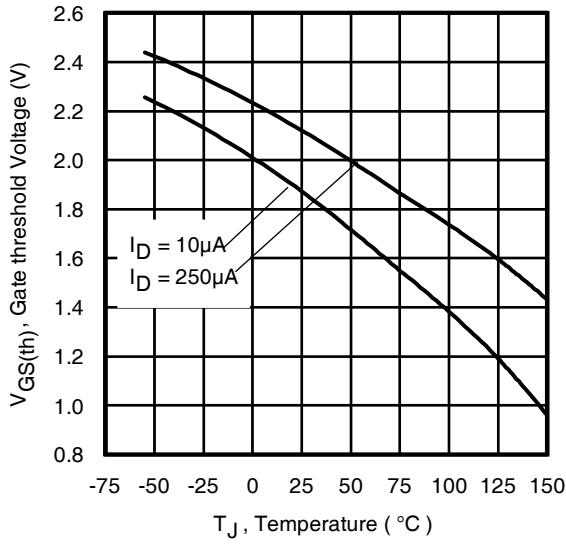
**Fig 13.** Typical On-Resistance vs. Drain Current



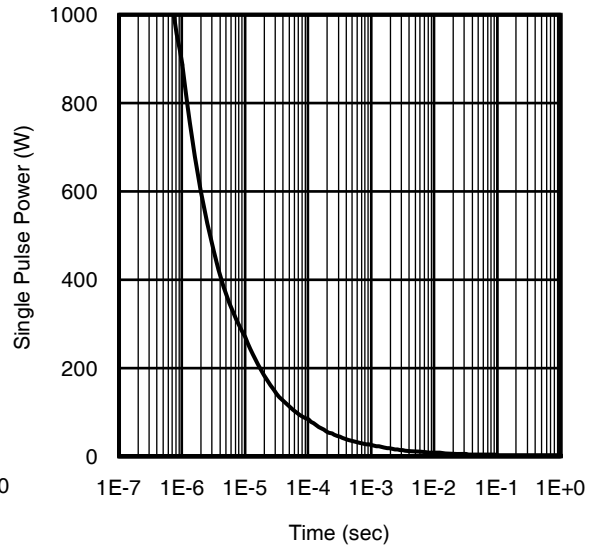
**Fig 14a.** Basic Gate Charge Waveform



**Fig 14b.** Gate Charge Test Circuit

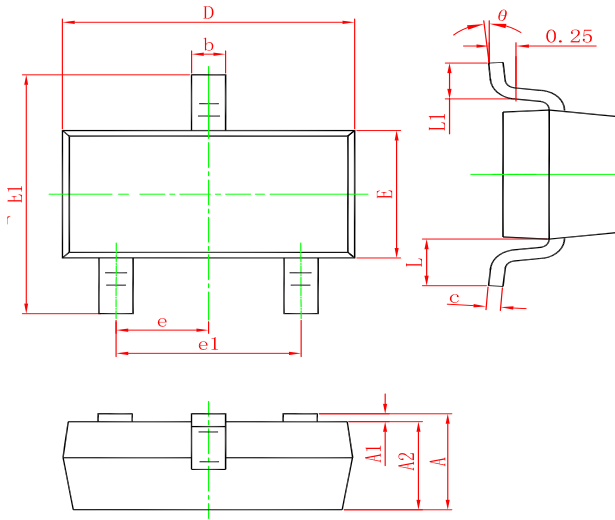


**Fig 15.** Typical Threshold Voltage vs. Junction Temperature



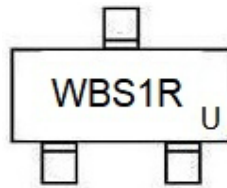
**Fig 16.** Typical Power vs. Time

**SOT-23 PACKAGE OUTLINE DIMENSIONS**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

**Marking**



**Ordering information**

Order code	Package	Baseqty	Deliverymode
UMW IRFML8244TR	SOT-23	3000	Tape and reel



单击下面可查看定价，库存，交付和生命周期等信息

[>>UMW\(友台半导体\)](#)