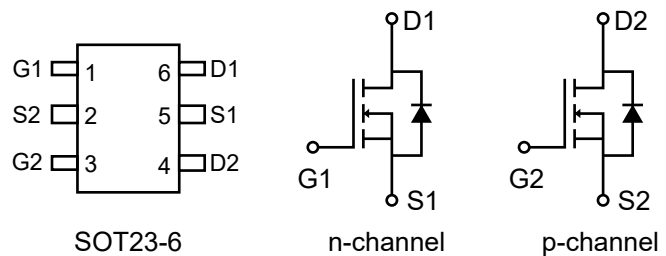


1.Features

- $V_{DS(V)}=20V$
- $R_{DS(ON)}<22m\Omega(V_{GS}=10V)$
- $R_{DS(ON)}<28m\Omega(V_{GS}=4.5V)$

2.Pinning information

Pin	Symbol	Description
1,3	G1, G2	GATE
5,2	S1, S2	SOURCE
6,4	D1, D2	DRAIN



3.Absolute Maximum Ratings $T_A=25^{\circ}C$ unless otherwise noted

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current ($T_J = 150^{\circ}C$)	$T_C=25^{\circ}C$	I_D	6	A
	$T_C=70^{\circ}C$		4	
	$T_A=25^{\circ}C$		$3.5^{b,c}$	
	$T_A=70^{\circ}C$		$2.8^{b,c}$	
Pulsed Drain Current		I_{DM}	18	
Continuous Source-Drain Diode Current	$T_C=25^{\circ}C$	I_S	1.17	
	$T_A=25^{\circ}C$		$0.95^{b,c}$	
Maximum Power Dissipation	$T_C=25^{\circ}C$	P_D	1.6	W
	$T_C=70^{\circ}C$		1	
	$T_A=25^{\circ}C$		$1.14^{b,c}$	
	$T_A=70^{\circ}C$		$0.73^{b,c}$	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^{\circ}C$
Soldering Recommendations (Peak Temperature) ^{d,e}			260	



4.Thermal resist ance rating

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient ^{b,d}	t ≤5s	R _{thJA}	93	110	°C/W
Maximum Junction-to-Foot	Steady-State	R _{thJF}	75	90	°C/W

- Notes:
- a. T_C=25 °C.
 - b. Surface Mounted on 1" x 1" FR4 board.
 - c. t =5s.
 - d. Maximum under steady state conditions is 150 °C/W.



5.Specifications (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static						
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} =0V, I _D =250μA	20			V
V _{DS} Temperature Coefficient	ΔV _{DS} /T _J	I _D =250μA		29		mV/°C
V _{GS(th)} Temperature Coefficient	ΔV _{GS(th)} /T _J			-4		
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4		1.5	V
Gate-Source Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
		V _{DS} =20V, V _{GS} =0V, T _J =55°C			10	
On-State Drain Current ^a	I _{D(ON)}	V _{DS} ≥5V, V _{GS} =10V	10			A
Drain-Source On-State Resistance ^a	R _{DS(ON)}	V _{GS} =10V, I _D =3.4A		22		mΩ
		V _{GS} =4.5V, I _D =3A		28		
Forward Transconductance ^a	g _{FS}	V _{DS} =10V, I _D =3.4A		10		S
Dynamic^b						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		400		pF
Output Capacitance	C _{oss}			55		
Reverse Transfer Capacitance	C _{rss}			26		
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =10V, I _D =3.4A		3.7	6	nC
				1.8	3	
Gate Source Charge	Q _{gs}	V _{DS} =10V, V _{GS} =4.5V, I _D =3.4A		0.74		
Gate Drain Charge	Q _{gd}			0.42		
Gate Resistance	R _g	f=1MHz	1	5	10	Ω
Turn-On DelayTime	t _{D(on)}	V _{DD} =10V, R _L =5.6Ω ID≥2.7A, V _{GEN} =4.5V Rg=1Ω		10	20	ns
Rise Time	t _r			15	30	
Turn-Off DelayTime	t _{D(off)}			10	20	
Fall Time	t _f			10	20	



Turn-On Delay Time	$t_{D(on)}$	$V_{DD}=10V, R_L=5.6\Omega$ $ID\leq 2.7A, V_{GEN}=10V$ $Rg=1\Omega$		5	10	ns
Rise Time	t_r			15	30	ns
Turn-Off Delay Time	$t_{D(off)}$			10	20	ns
Fall Time	t_f			10	20	ns
Drain-Source Body Diode Characteristics						
Continuous Source-Drain Diode Current	I_S	$T_C=25^{\circ}C$		1.2		A
Pulse Diode Forward Current ^a	I_{SM}			18		A
Body Diode Voltage	V_{SD}	$I_S=9A, V_{GS}=0V$		0.85	1.2	V
Body Diode Reverse Recovery Time	t_{rr}	$I_F=2.7A, dI/dt=100A/\mu s$ $T_J=25^{\circ}C$		10	20	ns
Body Diode Reverse Recovery Charge	Q_{rr}			4	10	nC
Reverse Recovery Fall Time	t_a			6		ns
Reverse Recovery Rise Time	t_b			4		ns

Notes:

- a. Pulse test; pulse width $\leq 300 \mu s$, duty cycle $\leq 2 \%$
- b. Guaranteed by design, not subject to production testing.



6.1 Typical characteristic 25 °C, unless otherwise noted

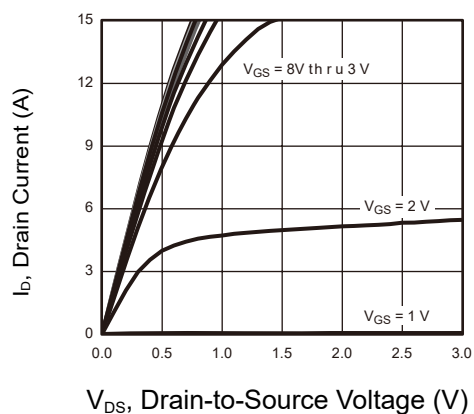


Figure 1: Output Characteristics

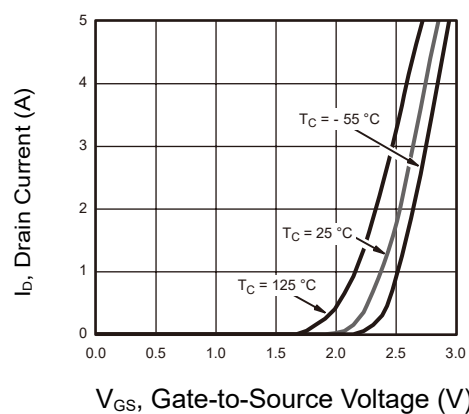


Figure 2: Transfer Characteristics

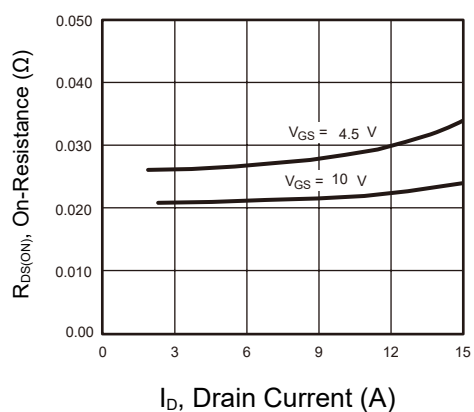


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

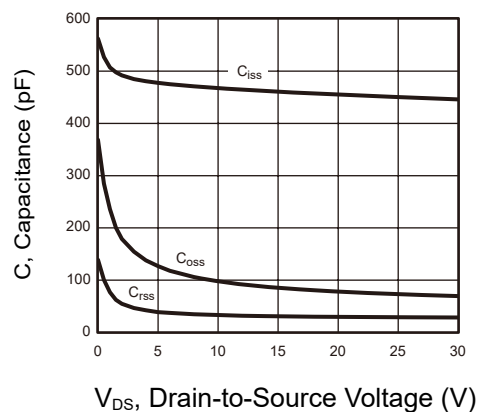


Figure 4: Capacitance

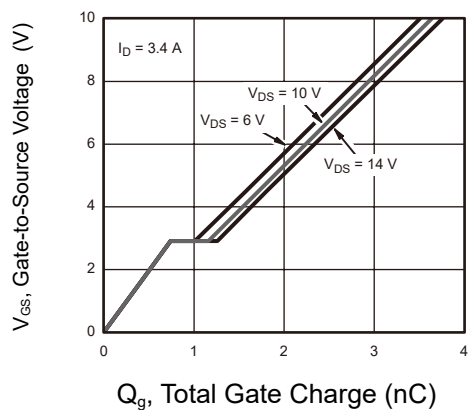


Figure 5: Gate Charge

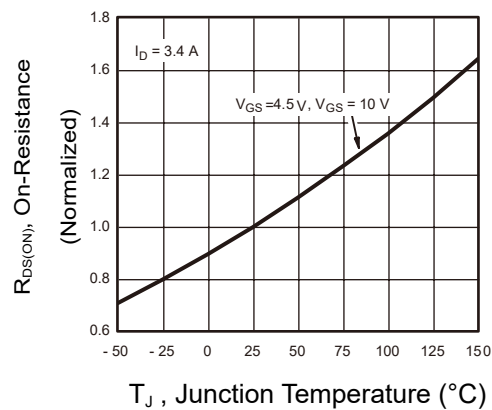
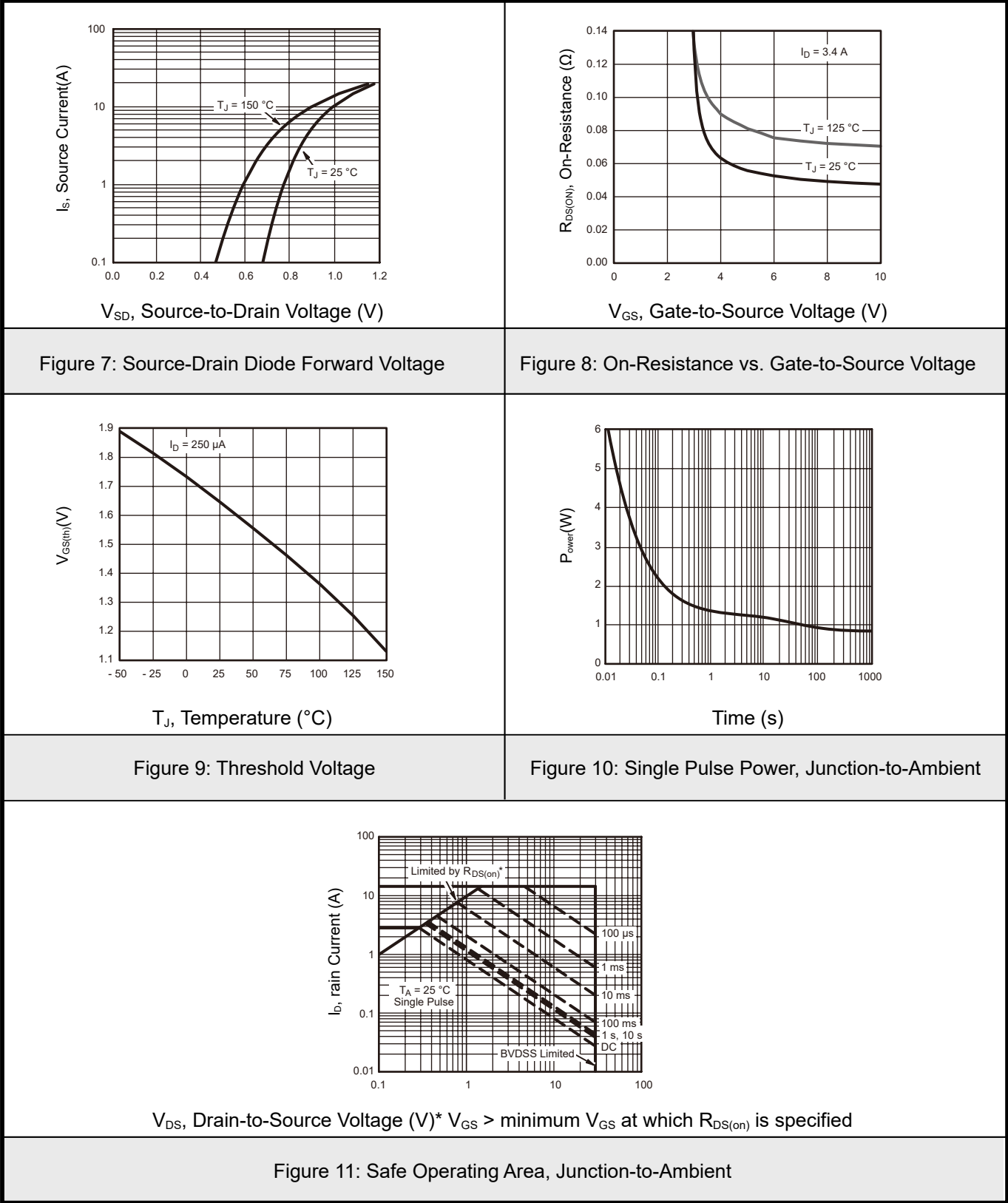


Figure 6: On-Resistance vs. Junction Temperature

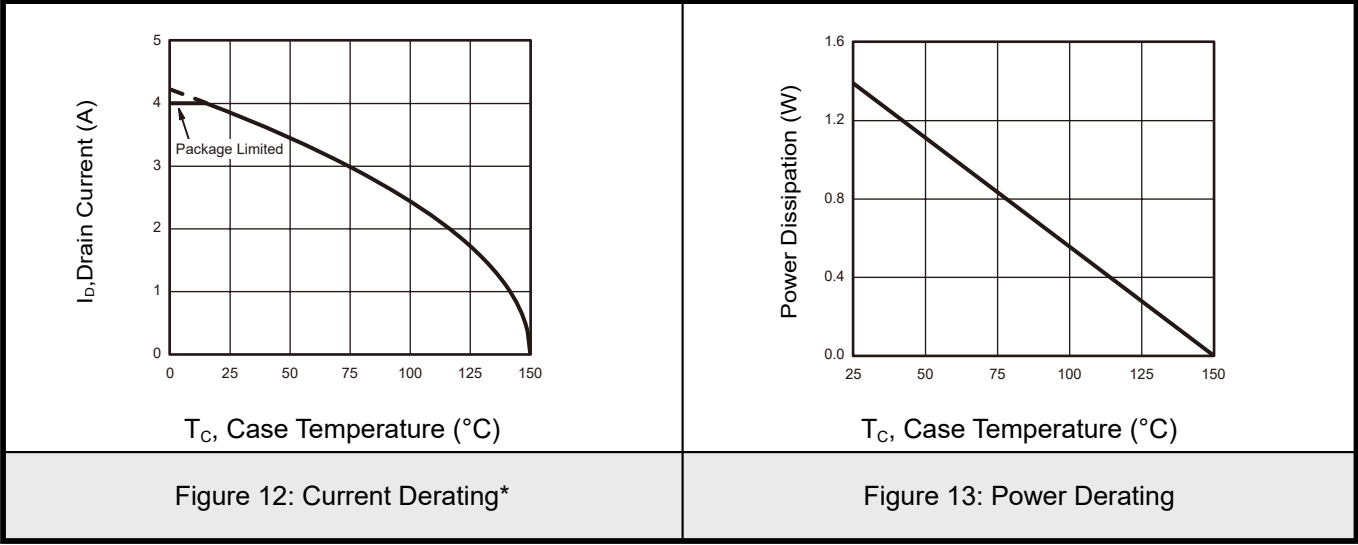


6.2Typical characteristic 25 °C, unless otherwise noted





6.3Typical characteristic 25 °C, unless otherwise noted



* The power dissipation P_D is based on $T_{J(max)} = 150\text{ }^{\circ}\text{C}$, using junction-to-case thermal resistance, and is more useful in settling the upperdissipation limit for cases where additional heatsinking is used. It is used to determine the current rating, when this rating falls below the package limit.



6.4Typical characteristic 25 °C, unless otherwise noted

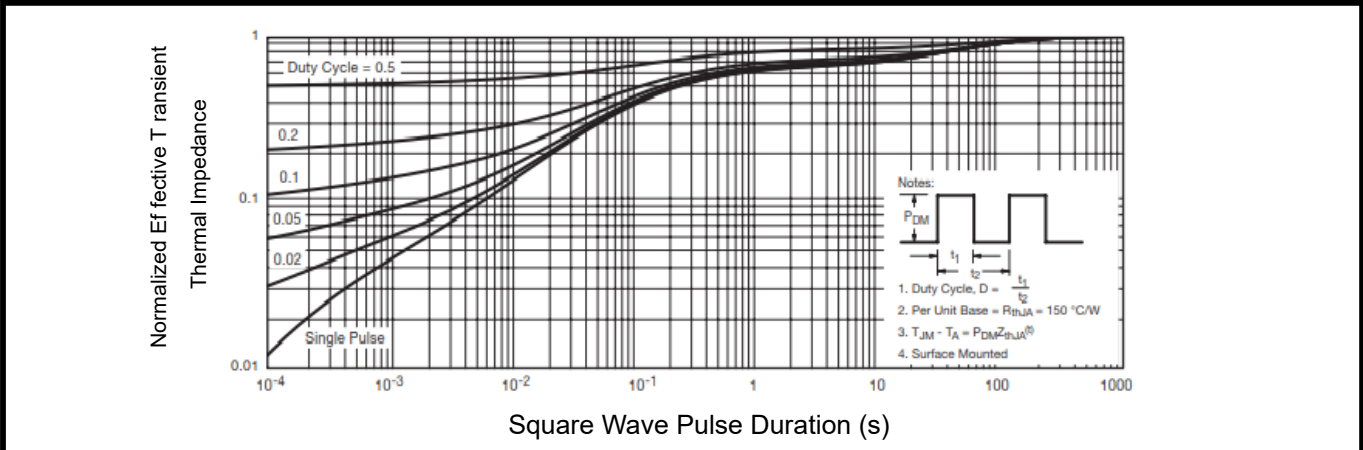


Figure 14: Normalized Thermal Transient Impedance, Junction-to-Ambient

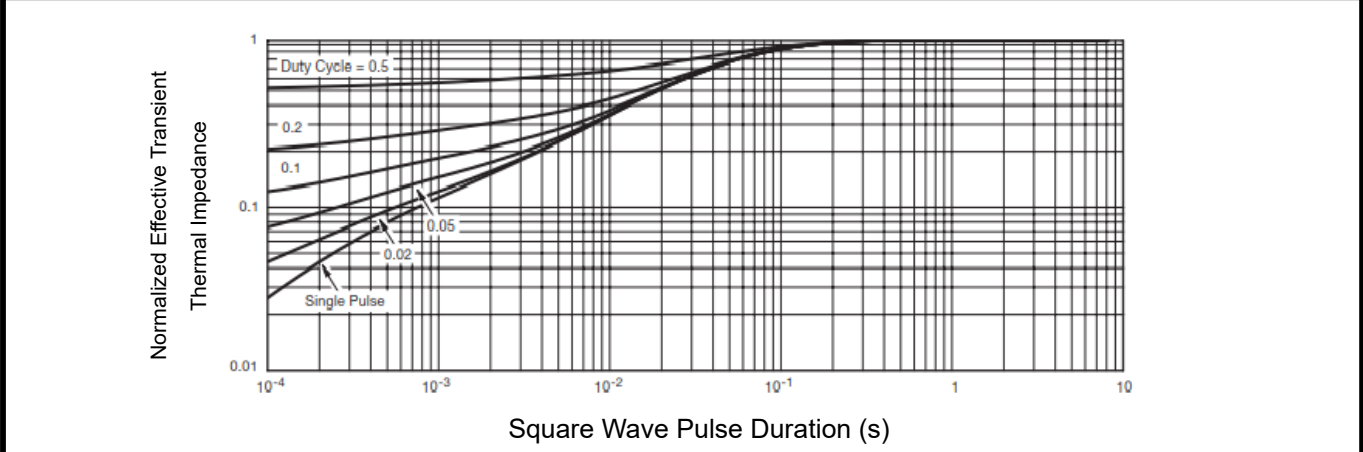
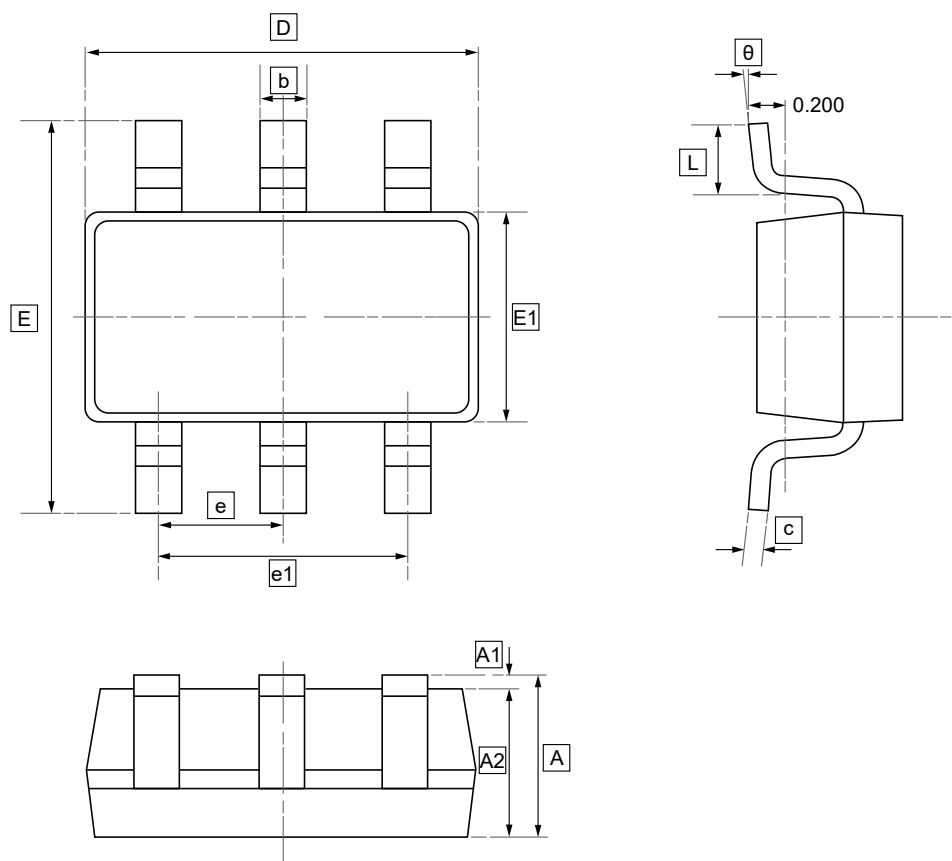


Figure 15: Normalized Thermal Transient Impedance, Junction-to-Foot



7.SOT23-6 Package Outlie Dimensions

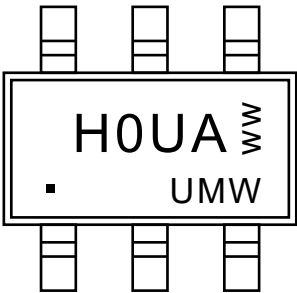


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E1	E	e	e1	L	θ
Min	1.050	0.000	1.050	0.300	0.100	2.820	1.500	2.650	0.950	1.800	0.300	0°
Max	1.250	0.100	1.150	0.500	0.200	3.020	1.700	2.950	BSC	2.000	0.600	8°



8.Ordering information



ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW AO6800	SOT23-6	3000	Tape and reel



9.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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