



UTD351

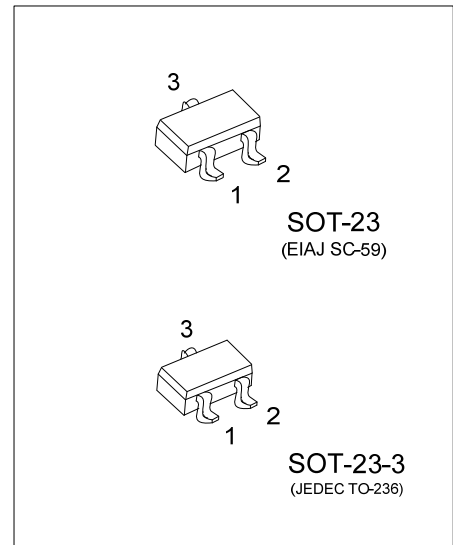
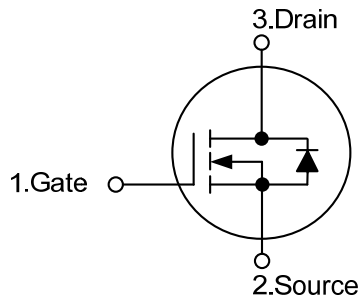
Power MOSFET

N-CHANNEL ENHANCEMENT MODE

■ DESCRIPTION

As N-Channel Logic Level MOSFET, **UTD351** has been optimized for battery power management applications. And it's produced using UTC's Trench process.

■ SYMBOL



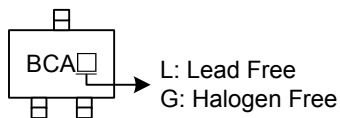
■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTD351L-AE2-R	UTD351G-AE2-R	SOT-23-3	G	S	D	Tape Reel
UTD351L-AE3-R	UTD351G-AE3-R	SOT-23	G	S	D	Tape Reel

Note: Pin Assignment: G: Gate S: Source D: Drain

<p>UTD351G-AE2-R</p>	<p>(1) R: Tape Reel (2) AE2: SOT-23-3, AE3: SOT-23 (3) G: Halogen Free and Lead Free , L: Lead Free</p>
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■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	
Continuous Drain Current (Note 3)	I_D	1.4	A
Pulsed Drain Current	I_{DM}	10	
Power Dissipation	P_D	0.5	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient (Note 3)	θ_{JA}		250		$^\circ\text{C}/\text{W}$
Junction-to-Case	θ_{JC}		75		$^\circ\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

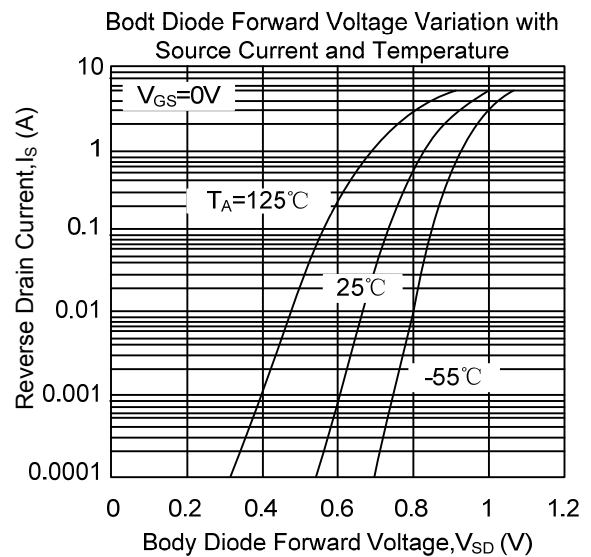
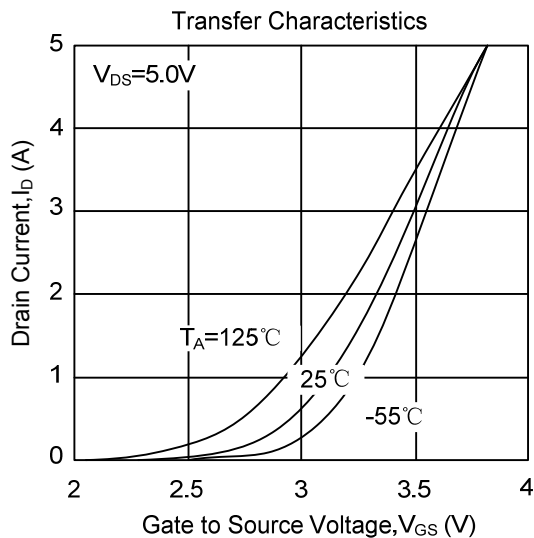
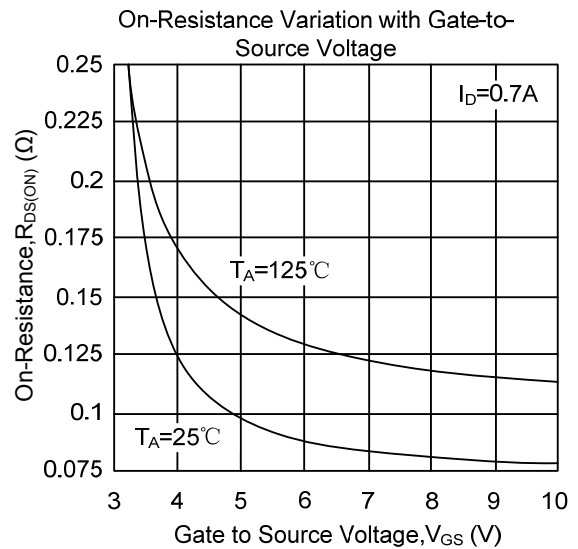
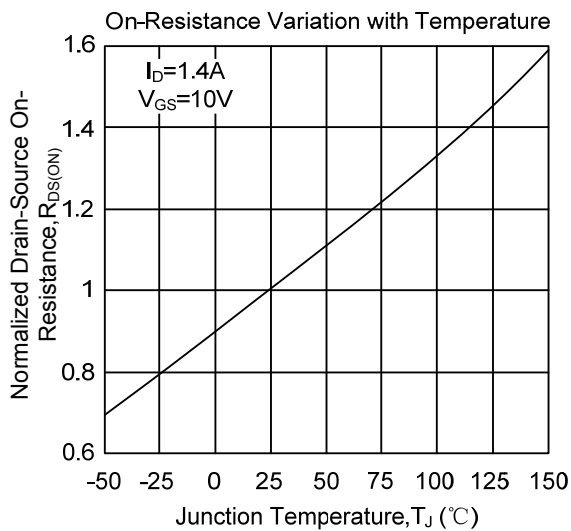
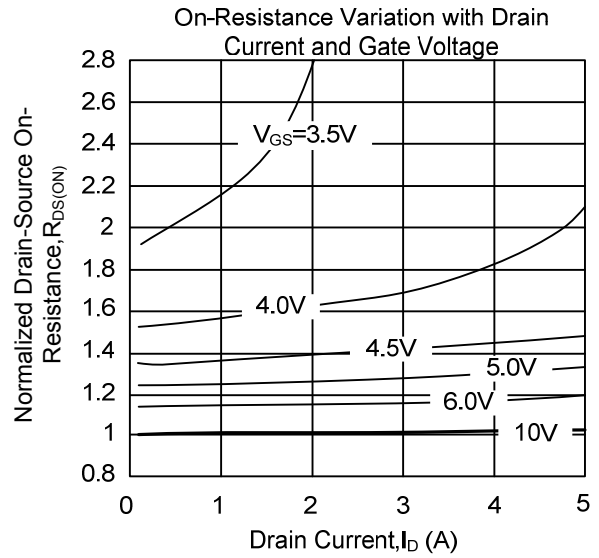
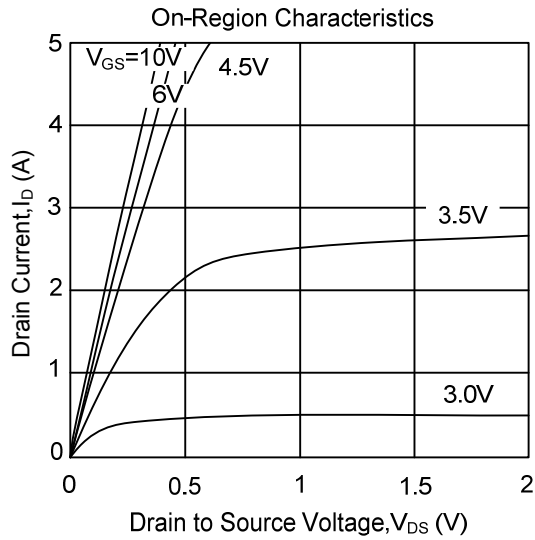
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$	30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 24\text{ V}, V_{GS} = 0\text{ V}$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$			± 100	nA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D = 250\ \mu\text{A}$, Referenced to 25°C		26		$\text{mV}/^\circ\text{C}$
ON CHARACTERISTICS (Note2)						
Gate-Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$	0.8	2.1	3	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 10\text{ V}, I_D = 1.4\text{ A}$		92	160	m Ω
		$V_{GS} = 4.5\text{ V}, I_D = 1.2\text{ A}$		120	250	
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V}, f = 1.0\text{ MHz}$		145		pF
Output Capacitance	C_{OSS}			35		
Reverse Transfer Capacitance	C_{RSS}			15		
SWITCHING PARAMETERS (Note2)						
Total Gate Charge	Q_G	$V_{DS} = 15\text{ V}, V_{GS} = 4.5\text{ V}, I_D = 1.4\text{ A}$		1.3	1.8	nC
Gate-Source Charge	Q_{GS}			0.5		
Gate-Drain Charge	Q_{GD}			0.5		
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD} = 15\text{ V}, I_D = 1\text{ A}, V_{GS} = 10\text{ V}, R_{GEN} = 6\ \Omega$		3	6	ns
Turn-ON Rise Time	t_R			8	16	
Turn-OFF Delay Time	$t_{D(OFF)}$			16	29	
Turn-OFF Fall-Time	t_F			2	4	
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	I_S				0.42	A
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0\text{ V}, I_S = 0.42\text{ A}$ (Note 2)		0.8	1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 1.4\text{ A}, dI_F/dt = 100\text{ A}/\mu\text{s}$		11		ns
Reverse Recovery Charge	Q_{rr}			4		nC

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

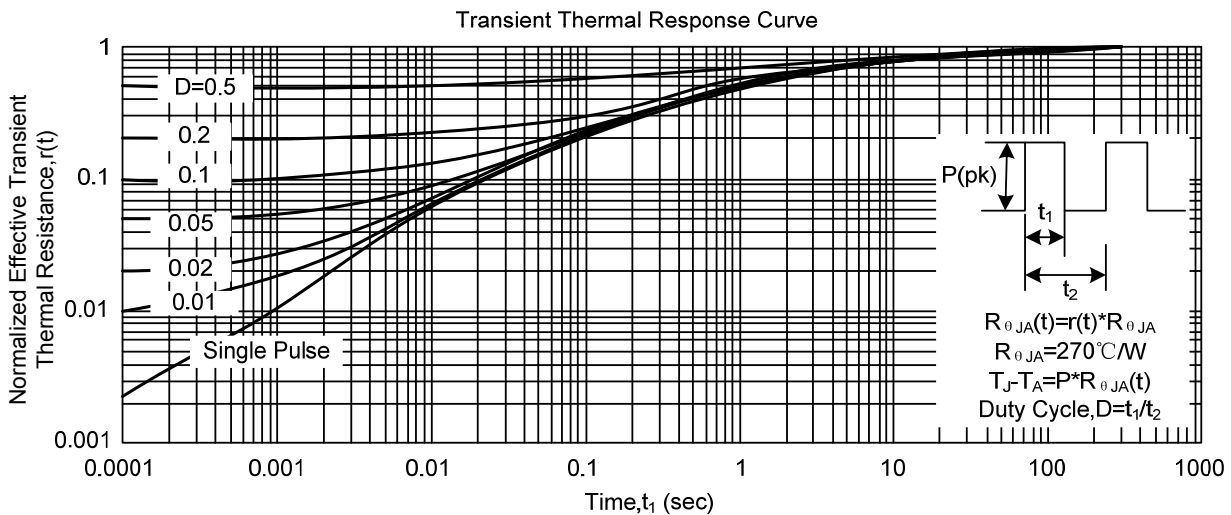
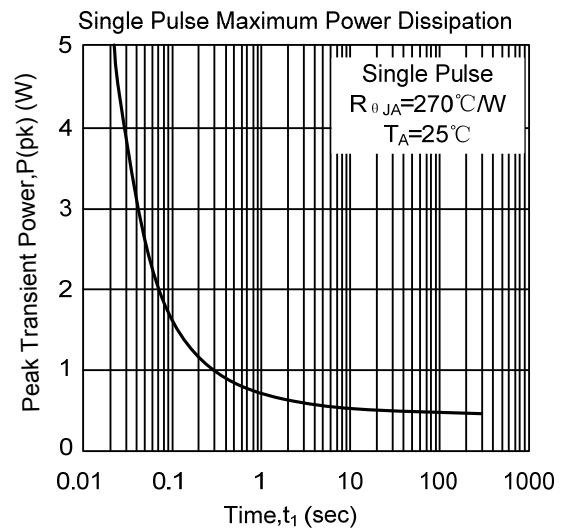
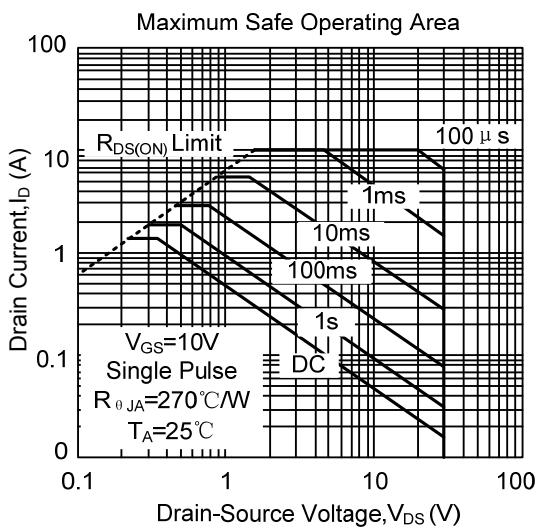
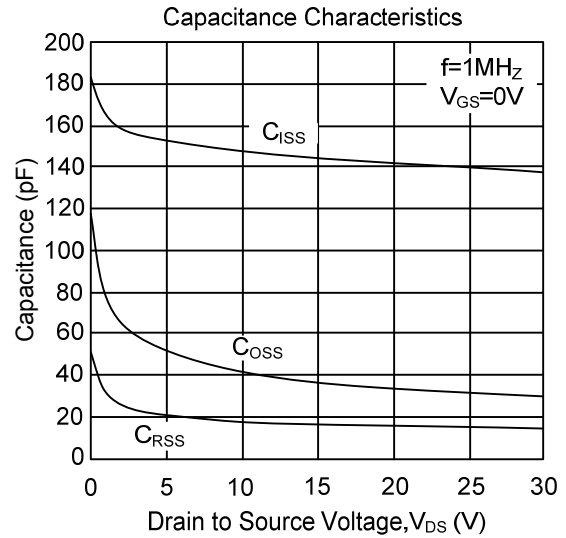
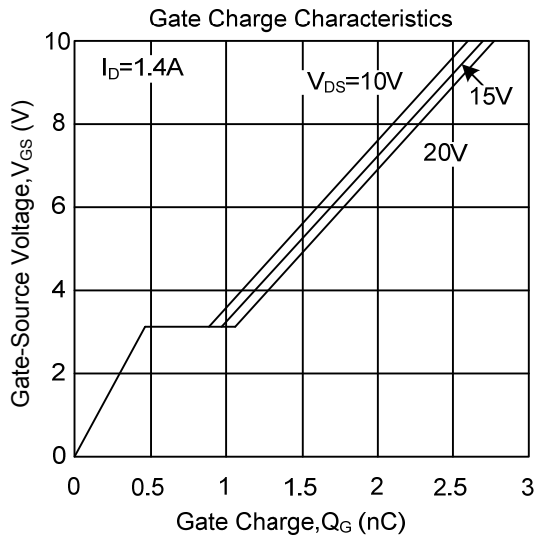
2. Pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

3. Surface mounted on 1 in^2 copper pad of FR4 board; $250^\circ\text{C}/\text{W}$ when mounted on min.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



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