



UT2340

Power MOSFET

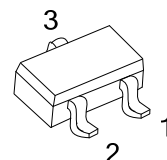
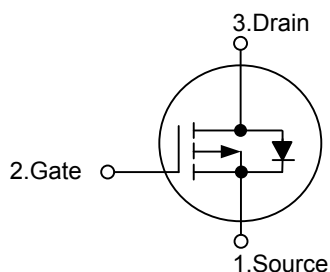
P-CHANNEL ENHANCEMENT MODE

■ DESCRIPTION

The UTC **UT2340** is P-Channel enhancement mode Power MOSFET, designed in serried ranks with fast switching speed, low on-resistance and favorable stabilization.

Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

■ SYMBOL



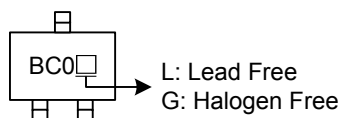
SOT-23

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2340L-AE3-R	UT2340G-AE3-R	SOT-23	S	G	D	Tape Reel

UT2340L-AE3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AE3: SOT-23
	(3)Lead Plating	(3) G: Halogen Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current (Note 3)	I_D	-2	A
Pulsed Drain Current (Note 1, 2)	I_{DM}	-10	A
Total Power Dissipation	P_D	0.46	W
Junction Temperature	T_J	+150	°C
Strong Temperature	T_{STG}	-55 ~ +150	°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 DATA

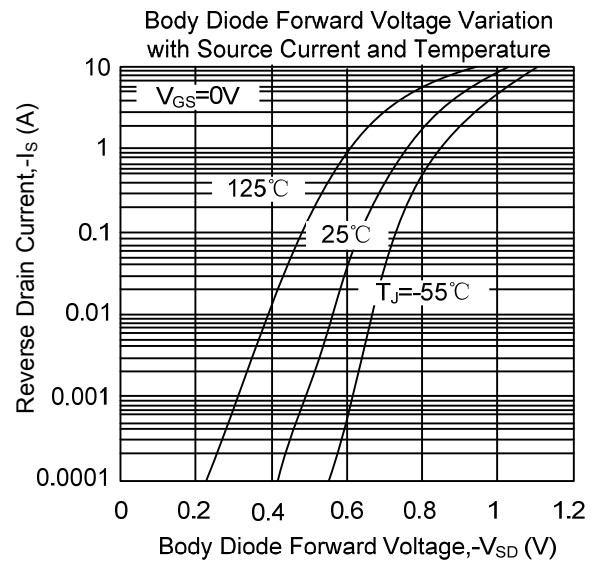
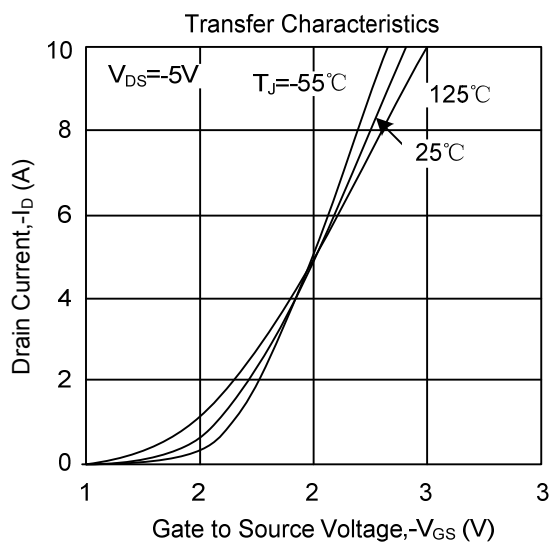
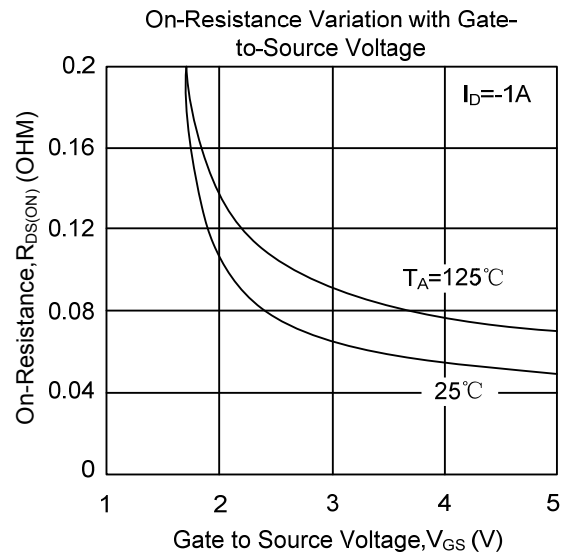
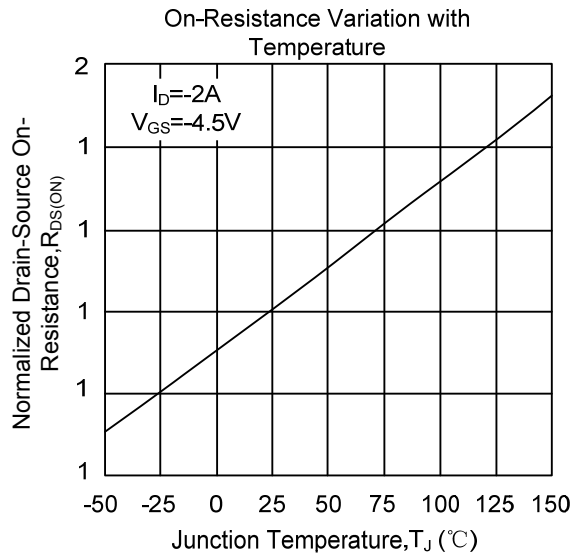
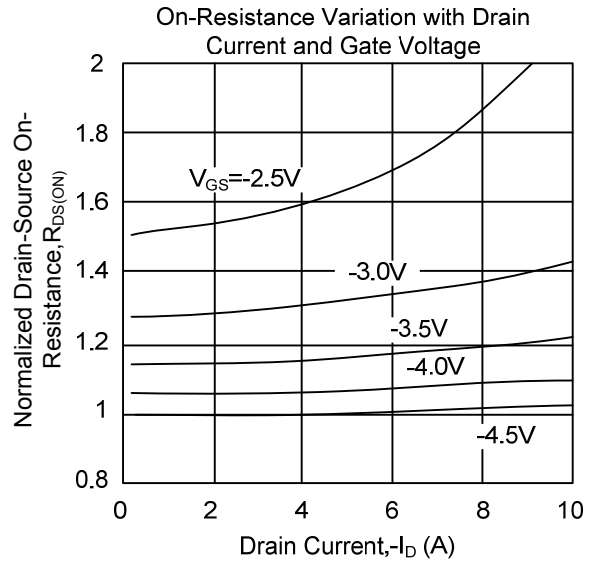
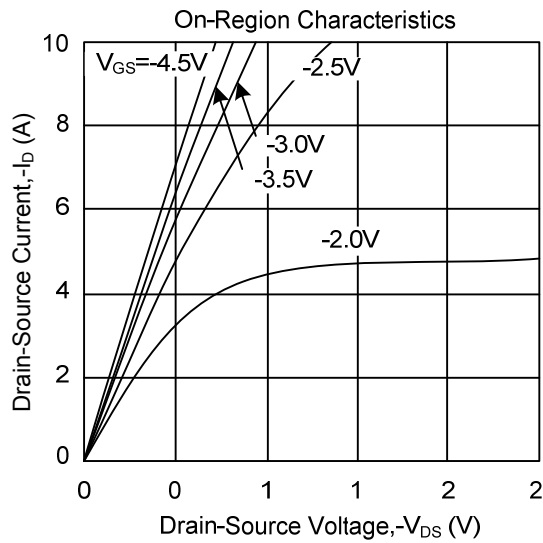
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note 3)	θ_{JA}		250		°C/W
Junction to Case	θ_{JC}		75		°C/W

■ ELECTRICAL CHARACTERISTICS (T_J = 25°C, unless otherwise specified)

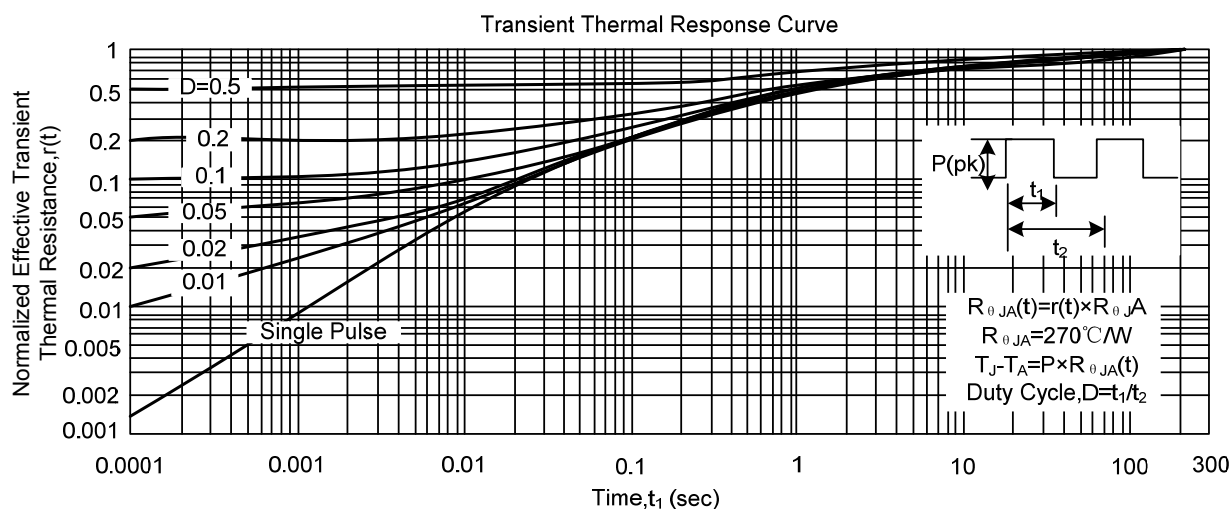
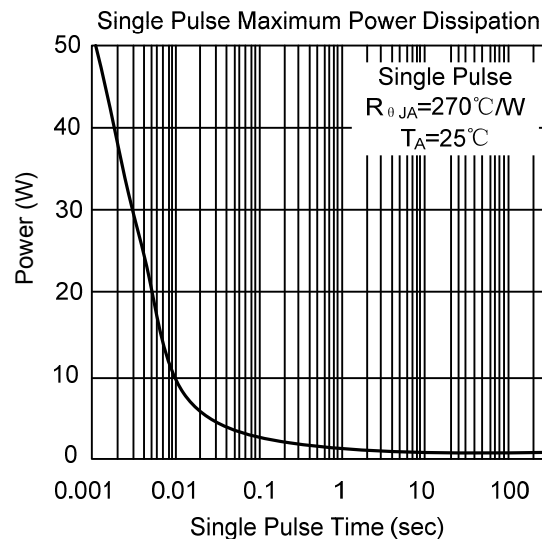
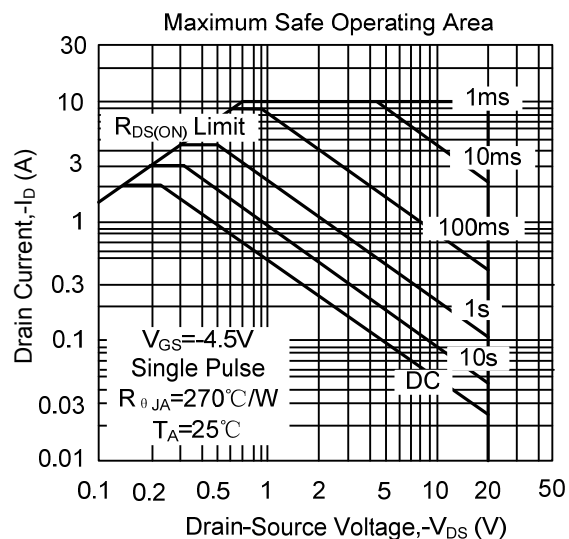
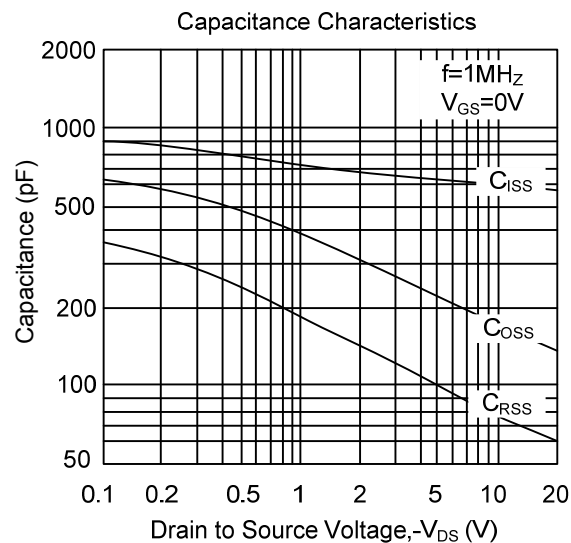
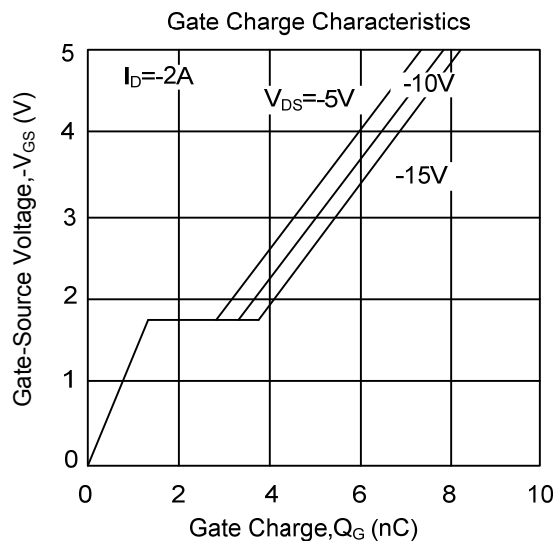
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{ V}, I_D=-250\text{ }\mu\text{A}$	-20			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-16\text{ V}, V_{GS}=0\text{ V}$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{ V}, V_{DS}=0\text{ V}$			± 100	nA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D=-250\mu\text{A}$, Referenced to 25°C		-15		mV/°C
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-250\text{ }\mu\text{A}$	-0.4	-0.9	-1.5	V
Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS}=-4.5\text{ V}, I_D=-2\text{ A}$		52	70	mΩ
		$V_{GS}=-2.5\text{ V}, I_D=-1.7\text{ A}$		78	110	mΩ
		$V_{GS}=-1.8\text{ V}, I_D=-1.2\text{ A}$			210	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS}=-10\text{ V}, V_{GS}=0\text{ V}, f=1.0\text{ MHz}$		600		pF
Output Capacitance	C_{OSS}			175		pF
Reverse Transfer Capacitance	C_{RSS}			80		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note 2)	$t_{D(ON)}$	$V_{DD}=-5\text{ V}, I_D=-0.5\text{ A}, V_{GS}=-4.5\text{ V}, R_{GEN}=6\text{ }\Omega$		6	12	ns
Turn-ON Rise Time	t_R			9	18	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			31	50	ns
Turn-OFF Fall Time	t_F			26	42	ns
Total Gate Charge (Note 2)	Q_G	$V_{DS}=-10\text{ V}, V_{GS}=-4.5\text{ V}, I_D=-2\text{ A}$		8	11	nC
Gate-Source Charge	Q_{GS}			1.3		nC
Gate-Drain Charge	Q_{GD}			2.2		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Voltage(Note2)	V_{SD}	$V_{GS}=0\text{ V}, I_S=-0.42\text{ A}$ (Note)		-0.7	-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I_S				-0.42	A

Notes: 1. Pulse width limited by $T_{J(MAX)}$
2. Pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.
3. Surface mounted on 1 in² copper pad of FR4 board; 270°C/W when mounted on min.

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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