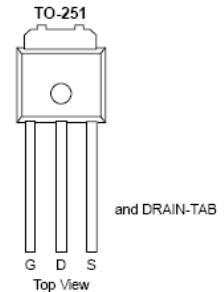
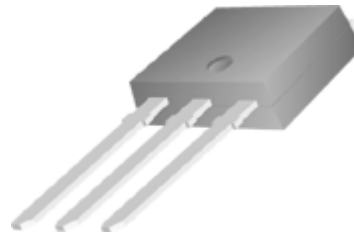


N-Channel 300-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $r_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ (m Ω)	I_D (A)
300	600 @ $V_{GS} = 10V$	7.5
	900 @ $V_{GS} = 5.5V$	6.1

- Low $r_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper lead DPAK saves board space
- Fast switching speed
- High performance trench technology



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Limit	Units
Drain-Source Voltage	V_{DS}	300	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ^a	$T_C=25^\circ C$ I_D	7.5	A
Pulsed Drain Current ^b	I_{DM}	36	
Continuous Source Current (Diode Conduction) ^a	I_S	5	A
Power Dissipation ^a	$T_C=25^\circ C$ P_D	50	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 175	$^\circ C$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	50	$^\circ C/W$
Maximum Junction-to-Case	$R_{\theta JC}$	3.0	$^\circ C/W$

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
- b. Pulse width limited by maximum junction temperature

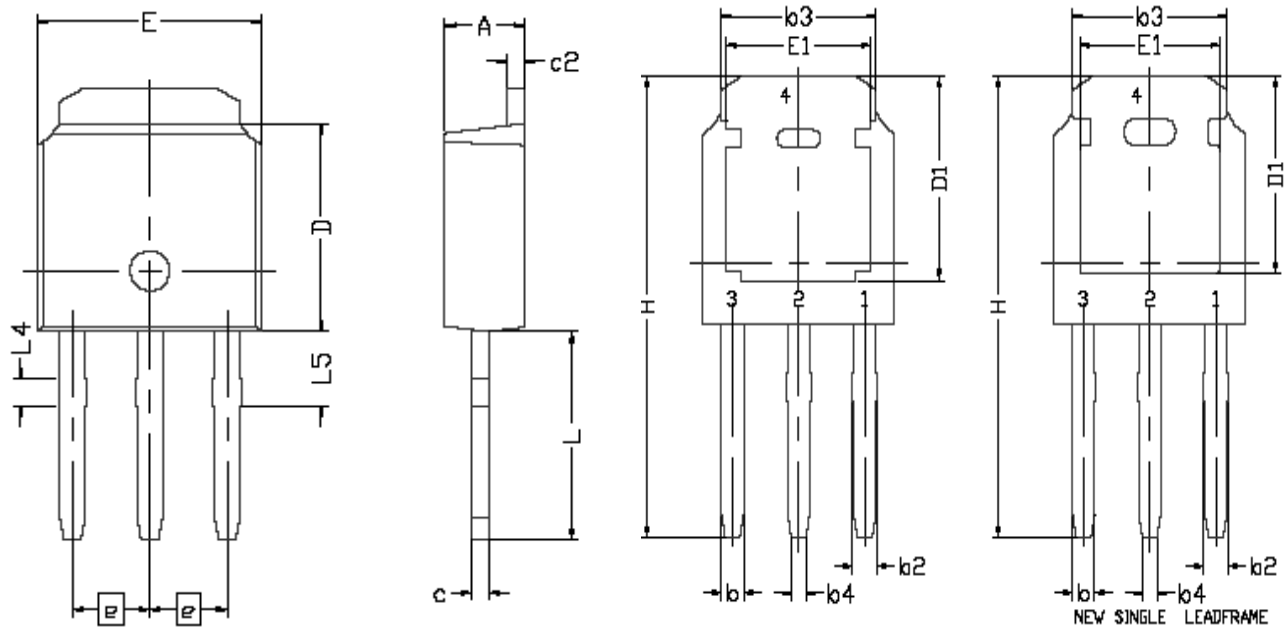
SPECIFICATIONS (T _A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 uA	1.0			V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = 20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 240 V, V _{GS} = 0 V			1	uA
		V _{DS} = 240 V, V _{GS} = 0 V, T _J = 55°C			25	
On-State Drain Current ^A	I _{D(on)}	V _{DS} = 5 V, V _{GS} = 10 V	2			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = 10 V, I _D = 1 A			600	mΩ
		V _{GS} = 5.5 V, I _D = 1 A			900	
Forward Transconductance ^A	g _{fs}	V _{DS} = 40 V, I _D = 1 A		4.4		S
Diode Forward Voltage	V _{SD}	I _S = 1 A, V _{GS} = 0 V		1.1		V
Dynamic^b						
Total Gate Charge	Q _g	V _{DS} = 25 V, V _{GS} = 10 V, I _D = 1 A		19		nC
Gate-Source Charge	Q _{gs}			3		
Gate-Drain Charge	Q _{gd}			9.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 100 V, R _L = 25 Ω, I _D = 9 A, V _{GEN} = 10 V		25		nS
Rise Time	t _r			60		
Turn-Off Delay Time	t _{d(off)}			65		
Fall-Time	t _f			45		

Notes

- Pulse test: PW ≤ 300us duty cycle ≤ 2%.
- Guaranteed by design, not subject to production testing.

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Package Information



DIMENSIONAL REQUIREMENTS			
SYMBOL	MIN	NUM	MAX
E	6.40	6.60	6.731
L		4.00	
L4	0.66	0.76	0.86
L5	1.96	2.16	2.36
D	6.00	6.10	6.223
H	12.90	13.20	13.50
B	0.64	0.76	0.88
B2	0.77	0.84	1.14
B3	5.21	5.34	5.46
B4	0.41	0.51	0.61
E	2.286 BSC		
A	2.20	2.30	2.38
C	0.40	0.50	0.60
C2	0.40	0.50	0.60
D1	5.30		
E1	4.40		