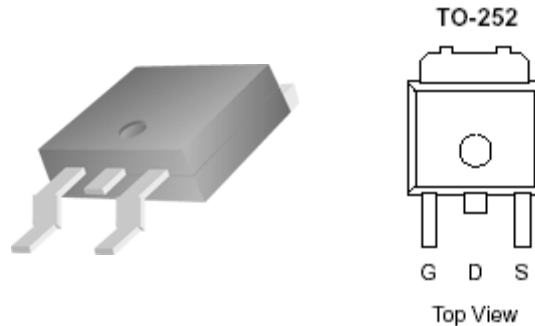


## P-Channel 30-V (D-S) MOSFET

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.

- Low  $r_{DS(on)}$  provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe TO-252 saves board space
- Fast switching speed
- High performance trench technology



PRODUCT SUMMARY		
$V_{DS}$ (V)	$r_{DS(on)}$ m( $\Omega$ )	$I_D$ (A)
-30	34 @ $V_{GS} = -10V$	32
	55 @ $V_{GS} = -4.5V$	25

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current <sup>a</sup>	$T_A=25^\circ C$ $I_D$	32	A
Pulsed Drain Current <sup>b</sup>	$I_{DM}$	$\pm 40$	
Continuous Source Current (Diode Conduction) <sup>a</sup>	$I_S$	-30	A
Power Dissipation <sup>a</sup>	$T_A=25^\circ C$ $P_D$	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 <sup>a</sup>	$R_{\theta JA}$	50	$^\circ C/W$
Maximum Junction-to-Case	$R_{\theta JC}$	3.0	$^\circ C/W$

### Notes

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

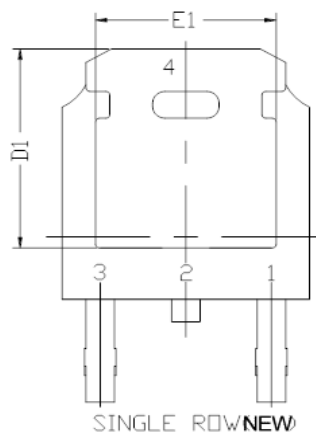
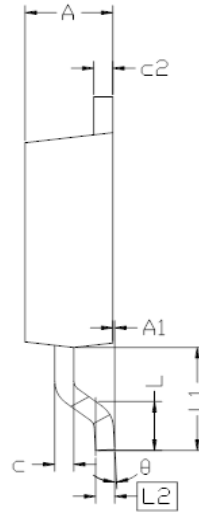
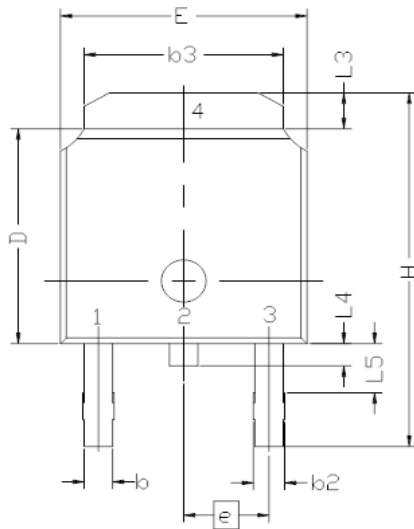
SPECIFICATIONS (T <sub>A</sub> = 25°C UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
<b>Static</b>						
Gate-Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 uA	-1			
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -24 V, V <sub>GS</sub> = 0 V			-1	uA
		V <sub>DS</sub> = -24 V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 55°C			-5	
On-State Drain Current <sup>A</sup>	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -10 V	-32			A
Drain-Source On-Resistance <sup>A</sup>	r <sub>DS(on)</sub>	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -2 A			34	mΩ
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2 A			55	
Forward Transconductance <sup>A</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -15 V, I <sub>D</sub> = -2 A		31		S
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> = -2 A, V <sub>GS</sub> = 0 V		-0.7		V
<b>Dynamic<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -15 V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -21 A		14		nC
Gate-Source Charge	Q <sub>gs</sub>			4		
Gate-Drain Charge	Q <sub>gd</sub>			8		
<b>Switching</b>						
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -15 V, R <sub>L</sub> = 15 Ω, I <sub>D</sub> = -41 A, V <sub>GEN</sub> = -10 V, R <sub>G</sub> = 6Ω		4		nS
Rise Time	t <sub>r</sub>			5		
Turn-Off Delay Time	t <sub>d(off)</sub>			80		
Fall-Time	t <sub>f</sub>			40		

## Notes

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

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# Package Information



SYMBOL	DIMENSIONAL REQMTS		
	MIN	NOM	MAX
E	6.40	6.60	6.731
L	1.40	1.52	1.77
L1	2.743 REF		
L2	0.508 BSC		
L3	0.89	--	1.27
L4	0.64	--	1.01
L5	--	--	--
D	6.00	6.10	6.223
H	9.40	10.00	10.40
b	0.64	0.76	0.88
b2	0.77	0.84	1.14
b3	5.21	5.34	5.46
e	2.286 BSC		
A	2.20	2.30	2.38
A1	0	--	0.127
c	0.45	0.50	0.60
c2	0.45	0.50	0.58
D1	5.30	--	--
E1	4.40	--	--
theta	0°	--	10°

Note:

1. All Dimension Are In mm.
2. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
3. Package Body Sizes Determined At The Outermost Extremes Of The Plastic Body Exclusive Of Mold Flash, Gate Burrs And Interlead Flash, But Including Any Mismatch Between The Top And Bottom Of The Plastic Body.