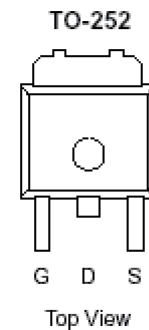
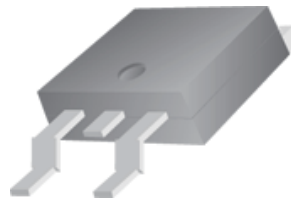


P-Channel 20-V (D-S) MOSFET

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 DPAK saves board space
- Fast switching speed
- High performance trench technology



PRODUCT SUMMARY

V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
-20	18 @ $V_{GS} = -4.5V$	44
	28 @ $V_{GS} = -2.5V$	35

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current ^a	I_D	46	A
Pulsed Drain Current ^b	I_{DM}	± 40	
Continuous Source Current (Diode Conduction) ^a	I_S	-30	A
Power Dissipation ^a	P_D	50	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 175	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

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

Notes

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

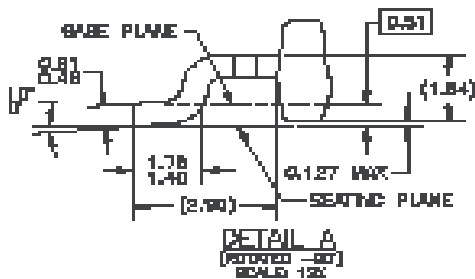
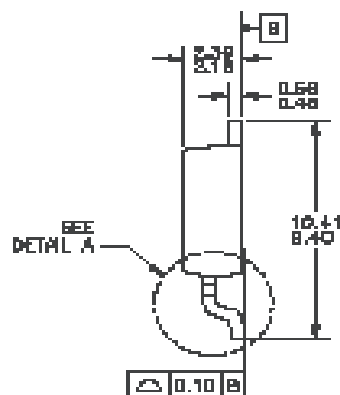
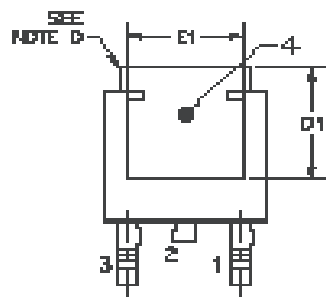
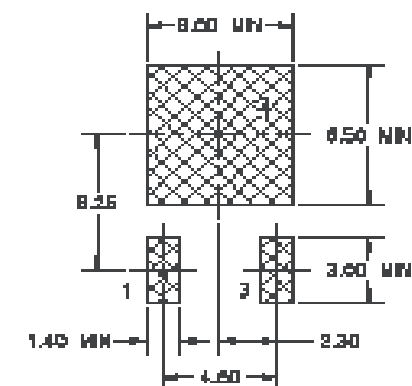
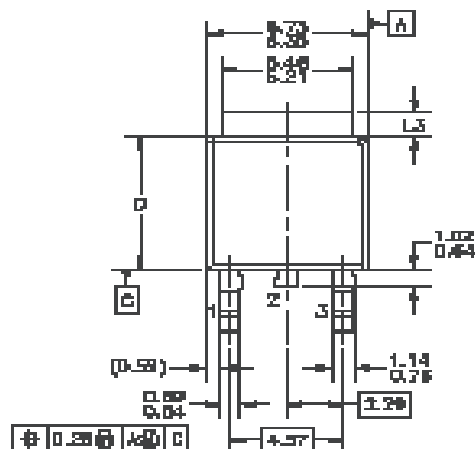
SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 uA	-0.4			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0 V			-1	uA
		V _{DS} = -16 V, V _{GS} = 0 V, T _J = 55°C			-5	
On-State Drain Current ^A	I _{D(on)}	V _{DS} = -5 V, V _{GS} = -4.5 V	-41			A
Drain-Source On-Resistance ^A	r _{DS(on)}	V _{GS} = -4.5 V, I _D = -20.5 A			18	mΩ
		V _{GS} = -2.5 V, I _D = -15.5 A			28	
Forward Transconductance ^A	g _{fs}	V _{DS} = -10 V, I _D = -20.5 A		31		S
Diode Forward Voltage	V _{SD}	I _S = -41 A, V _{GS} = 0 V		-0.7		V
Dynamic ^b						
Total Gate Charge	Q _g	V _{DS} = -10 V, V _{GS} = -4.5 V, I _D = -21 A		30		nC
Gate-Source Charge	Q _{gs}			4		
Gate-Drain Charge	Q _{gd}			6		
Switching						
Turn-On Delay Time	t _{d(on)}	V _{DD} = -10 V, R _L = 15 Ω , I _D = -41 A, V _{GEN} = -10 V, R _G = 6Ω		15		nS
Rise Time	t _r			12		
Turn-Off Delay Time	t _{d(off)}			62		
Fall-Time	t _f			46		

Notes

- Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

Package Information



- NOTES: UNLESS OTHERWISE SPECIFIED
- ALL DIMENSIONS ARE IN MILLIMETERS.
 - THIS PACKAGE CONFORMS TO JEDEC, TO-263, ISSUE C, VARIATION AA, 30 DE, DATED NOV. 1999.
 - DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
 - HEAT SINK TOP EDGE COULD BE IN CHAMFERED CORNERS OR EDGE PROTRUSION.
 - DIMENSIONS L3, L4, E1 AND D1 TABLE:

	OPTION A1	OPTION A2
L3	0.08-1.27	1.63-2.52
D	0.92-0.99	0.93-0.99
E1	4.32 MIN	3.81 MIN
D1	3.41 MIN	4.27 MIN