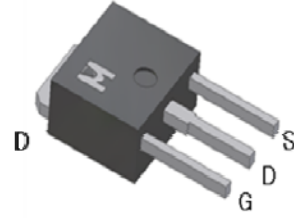
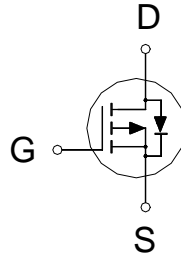


P-Channel Logic Level Enhancement Mode Field Effect Transistor

Product Summary:

$BV_{DSS}$	-30V
$R_{DS(on) (MAX.)}$	6.8m $\Omega$
$I_D$	-80A



UIS, Rg 100% Tested

Pb-Free Lead Plating & Halogen Free



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$  Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNIT
Gate-Source Voltage		$V_{GS}$	$\pm 25$	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	-80	A
	$T_C = 100\text{ }^\circ\text{C}$		-51	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	-240	
Avalanche Current		$I_{AS}$	-35	
Avalanche Energy	$L = 0.1\text{mH}, I_D = -35\text{A}, R_G = 25\text{ }\Omega$	$E_{AS}$	61.25	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	78	W
	$T_C = 100\text{ }^\circ\text{C}$		31	
Operating Junction & Storage Temperature Range		$T_{j}, T_{stg}$	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNIT
Junction-to-Case	$R_{\theta JC}$		1.6	$^\circ\text{C}/\text{W}$
Junction-to-Ambient <sup>3</sup>	$R_{\theta JA}$		62.5	

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>Duty cycle  $\leq 1\%$



ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-1	-1.5	-2	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0V			-1	μA
		V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 125 °C			-10	
On-State Drain Current <sup>1</sup>	I <sub>D(ON)</sub>	V <sub>DS</sub> = -5V, V <sub>GS</sub> = -10V	-80			A
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -24A		5.5	6.8	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -15A		8.5	11.5	
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -24A		24		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = -15V, f = 1MHz		4294		pF
Output Capacitance	C <sub>oss</sub>			634		
Reverse Transfer Capacitance	C <sub>rss</sub>			566		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 15mV, V <sub>DS</sub> = 0V, f = 1MHz		3.0		Ω
Total Gate Charge <sup>1,2</sup>	Q <sub>g</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -25A		62.4		nC
Gate-Source Charge <sup>1,2</sup>	Q <sub>gs</sub>			8.5		
Gate-Drain Charge <sup>1,2</sup>	Q <sub>gd</sub>			13		
Turn-On Delay Time <sup>1,2</sup>	t <sub>d(on)</sub>	V <sub>DS</sub> = -15V, I <sub>D</sub> = -1A, V <sub>GS</sub> = -10V, R <sub>GS</sub> = 2.7Ω		18		nS
Rise Time <sup>1,2</sup>	t <sub>r</sub>			26		
Turn-Off Delay Time <sup>1,2</sup>	t <sub>d(off)</sub>			22		
Fall Time <sup>1,2</sup>	t <sub>f</sub>			75		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>C</sub> = 25 °C)</b>						
Continuous Current	I <sub>S</sub>				-30	A
Pulsed Current <sup>3</sup>	I <sub>SM</sub>				-120	
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = -24A, V <sub>GS</sub> = 0V			-1.2	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = I <sub>S</sub> , dI <sub>F</sub> /dt = 100A / μS		52		nS
Reverse Recovery Charge	Q <sub>rr</sub>			60		nC

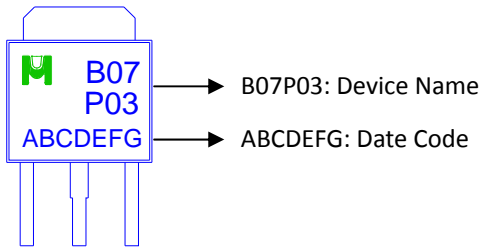
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

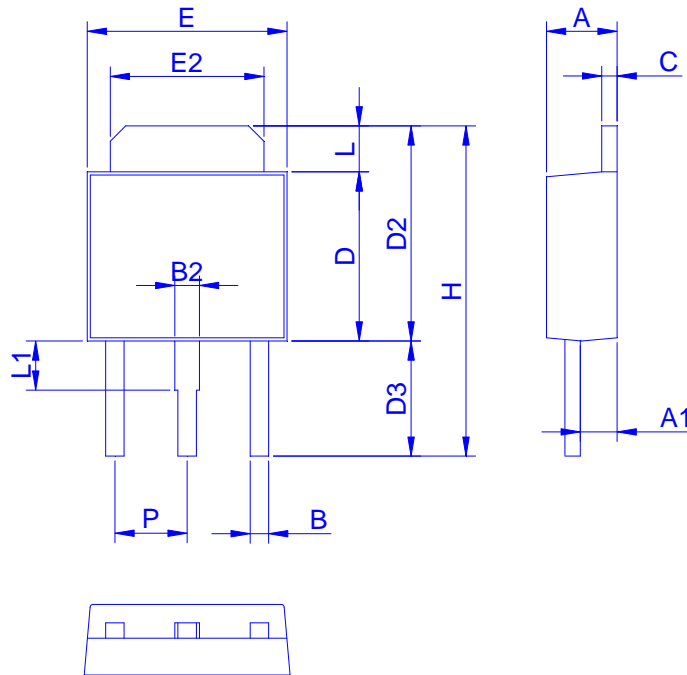
<sup>3</sup>Pulse width limited by maximum junction temperature.

Ordering & Marking Information:

Device Name: EMB07P03CS for IPAK (TO-251)



Outline Drawing



Dimension in mm

Dimension	A	A1	B	B2	C	D	D2	D3	E	E2	H	L	L1	P
Min.	2.10	0.90	0.40	0.60	0.40	5.30	6.70	3.40	6.30	4.80	10.2	0.89	0.90	2.10
Max.	2.50	1.50	0.90	1.15	0.60	6.25	7.30	4.30	6.80	5.50	11.5	1.40	1.80	2.50

